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ABSTRACT

The question asked in this study is "What are the processes by which different methods of desegregation affect different types of students on different kinds of outcomes?" This analysis focuses on three different types of outcomes: achievement test scores, college attendance, and reaching the junior year of college. The relationship between school racial composition and college attendance and survival rates for blacks is analyzed. The relationship between school racial composition and black achievement test score performance is also examined. Both these analyses are done separately for region (South or North). Parallel data for whites is presented. A causal model of some of the characteristics of desegregated schools is constructed. It focuses on two variables: racial composition of teaching staff and grades blacks earn. Those characteristics of desegregated schools that determine whether blacks attend college, the kind of college they attend, and the impact of the type of high school they attended on college survival rate are examined. It is proposed that the advantages of predominantly white schools in producing high achieving, college bound black students occur only because highly motivated black students choose to attend them. (Author/MC)

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THE INFLUENCE OF HIGH SCHOOL RACIAL COMPOSITION ON BLACK COLLEGE ATTENDANCE AND TEST PERFORMANCE,

National Longitudinal Study.

By

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U S DEPARTMENT OF HEALTH, EDUCATION & WELFARE
NATIONAL INSTITUTE OF EDUCATION

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PREFACE

This is the final report of a research project funded by the National Center for Education Statistics (NCES) of the U.S. Department of Health, Education, and Welfare. NCES let five contracts in 1975, each dealing with a different area of analysis of the National Longitudinal Study of the High School Graduating Class of 1972. This particular contract was in the area "The Effects of the Secondary School."

The aggregate high school data file used in most of this analysis (and its codebook) was provided to NCES to permit further research. Interested persons should inquire of Dr. Kenneth Tabler regarding its availability.

SUMMARY

In this paper we will examine the impact of high school racial composition on the college attendance rates of black students for the first three years after high school graduation. We will also explore the relationship of high school racial composition to the achievement scores of blacks in their last year of high school.

The data are from the National Longitudinal Study of the High School Graduating Class of 1972. This study is valuable because of its large sample (23,451 students in 1316 high schools). But more important, it is one of the very few studies that follows students from the end of high school into young adulthood; students were surveyed as high school seniors in 1972 and again in 1973 and 1974. This enables us to define three student outcomes for each high school which has black students:

- The mean achievement test score of black students in 1972.
- The percentage of blacks entering college within three years of high school graduation.
- The percentage of blacks classified as college juniors three years after graduation.

The value premise underlying this analysis is that higher achievement test scores and higher rates of college attendance are beneficial to individual blacks and to the community as a whole.

These three outcomes are measured from NLS data. In addition, NLS data were merged with data (prepared by Wagner and Tenison of the College Entrance Examination Board) on the characteristics of the first institution attended by all students who entered college. These data are used to test the hypothesis that high school factors influence the percentage of students becoming college juniors by influencing the type of college they attend. One independent variable is the racial composition of the high school, taken from a survey of principals in the NLS schools. In addition, data on the racial composition of the school and the degree of school segregation in the school district were taken from the Directory of Public Elementary and Secondary Schools, Fall 1972 (Department of Health, Education and Welfare, undated).

Multiple regression was used in analysis. While some of the analysis was done at the individual level, most was done with data aggregated to the high school level. (The high school is an appropriate unit of analysis since we are concerned with school factors influencing a school's "performance" in terms of the outcomes stated above.)

One of the most serious methodological problems in non-experimental research is the possibility of self-selection biases. In this case, such bias might appear if high-ability or college-bound black students choose to attend predominantly white schools. This would cause these schools to have high test score means or high rates of college attendance, which could be falsely attributed to a supposed superior quality of education in these schools. This possibility was tested by using characteristics of the school district in the analysis. The assumption is that while students might have considerable freedom to choose their school within a school district, they would have little opportunity to choose the school district they live in. But degree of opportunity to attend predominantly white schools varies considerably from one district to another, since some districts are more segregated or have smaller white populations than others. This means that, for example, a finding that black students in districts where most blacks are in predominantly white schools have high mean achievement test scores cannot be a result of self-selection. This and related analyses of district-level data are used to test for self-selection biases.

The main findings of the research on college outcomes are as follows:

- In the North, blacks and whites are equally likely to attend college but whites are more likely to be college juniors three years after high school graduation. In the South, black students are less likely both to enter college and to be college juniors three years after high school graduation.
- In the North, black alumni from predominantly white high schools are more likely to be college juniors three

years after graduation. We estimate that alumni of predominantly white schools have an approximate 3:2 advantage over alumni of black schools in their rates of becoming college juniors. (We estimate the rates to be around 20 percent in schools which are 90 percent white, and around 13 percent in all black schools, after SES and school district size are controlled.)

- In the South, black alumni of predominantly white schools are less likely to attend college and much less likely (by a 2:3 ratio) to be college juniors in 1975 than are alumni of black high schools. The relationship may be even stronger, since there is some evidence of a self-selection bias favoring predominantly white schools.
- Predominantly white schools in the North would have even higher black college attendance and junior status rates, and predominantly white schools in the South would not have such low rates on these outcomes, if the relative grade standing of black students were not a major factor influencing college plans. A black student making Bs in a black school is likely to go to college, but the same student in a predominantly white school would be likely to make Cs causing him to forego college. These data do not permit us to decide whether this is due to the student's own negative self-evaluation or due to the way he is counseled.
- In the South, an additional factor working against students in predominantly white schools is the absence of connections to the traditional black colleges. We hypothesize that this is due to inadequate knowledge on the part of white counselors.
- In both the South and the North, the lower the proportion of black teachers in the school, the lower the grades of black students and the lower their college attendance rates. These findings hold when school racial composition is controlled.

- Black graduates of northern high schools are more likely to hold scholarships as freshmen in white colleges than graduates of southern high schools. This suggests that either southern high schools have inadequate counseling, or southern white colleges have less financial aid for black students.
- Among southern black high school graduates, a larger fraction hold scholarships as freshmen in black colleges than in white colleges.
- In both the North and the South, black students in predominantly white high schools appear to benefit in terms of college opportunities if their school had a black counselor.
- In the South, black alumni of black high schools where the counselor(s) is white are more likely to hold a freshman scholarship if they go to a white college. This suggests that white counselors are valuable in southern black high schools.
- In the North, schools with Upward Bound programs have more black alumni holding freshman scholarships.

The main findings of the research on achievement test scores are as follows:

- In the North, black students in predominantly white schools have higher achievement test scores than those in predominantly black schools. The difference on the order of three-eighths of a standard deviation cannot be attributed to self-selection. When eight other measures of student interracial schooling were used, results consistent with this were obtained six times.
- In the South, there is no evidence of a difference between predominantly white and predominantly black schools in terms of test scores.

These results have considerable potential value in guiding policy concerning federal scholarship and federal education programs, and

in particular, they seem relevant to local and federal decisions regarding the education of future teachers and the in-service preparation of teachers prior to desegregation.

ACKNOWLEDGMENTS

We would like to thank Alan Wagner and Lawrence Tenison for generously providing us with a copy of the data on characteristics of institutions of higher learning which they have prepared for each NLS student attending college.

The confidentiality of the data used in this analysis was maintained by Albert Rosenthal of The Rand Computation Center. Stephen J. Carroll of Rand provided useful advice.

The project monitor was Dr. Kenneth Tabler of NCES, who assisted the project in many ways, and gave useful advice. His decision to provide an advance copy of the data from the second follow-up made much of the analysis possible. A draft of the report was reviewed by Bruce Eckland of the University of North Carolina; his comments and suggestions were extremely helpful.

We also wish to thank Carol Little, Connie Smedley, Jeanne Fadely, Mary Jane McMullan, Anne Belgard, Sarah Young, and Christie Vanatta who typed the manuscript and Marge Roach who coordinated their efforts.

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I. INTRODUCTION

During the early years of southern school desegregation, it was widely assumed that blacks not only had a constitutional right to attend school with whites, but would benefit from doing so. At first, studies tended to show this; but later, these studies came under attack, and the opposite assumption--that blacks did not benefit from bi-racial education--gained currency. It now seems that a third position is evolving among researchers and policymakers which argues that the real question is not whether blacks benefit from desegregation, since segregated schools are unconstitutional no matter what the effects, but rather, "What are the processes by which different methods of desegregation affect different types of students on different kinds of outcomes?" This analysis takes some steps in this direction. It looks at three different types of outcomes: achievement test scores, college attendance, and reaching the junior year of college. While we do not focus on different desegregation methods--we are contrasting schools of different racial composition with no data on how they came to have a certain racial composition--we do separate the South from the rest of the nation in order to contrast the two regions. Finally, this analysis introduces two important intervening variables into the analysis of high school racial composition--the racial composition of the teaching staff, and the grades earned by minority students in desegregated schools.

The bulk of previous research on desegregation has been limited. It has mainly examined the relationship between school racial composition and achievement, usually measured very soon after desegregation began. In some cases measures of self-esteem, or of student racial attitudes, have been included; but it is fair to say that the bulk of the research to date has been concerned with the short-run achievement test effects of desegregation. This approach no doubt derived from a once widely-held assumption that quality of education was markedly different in predominantly black and predominantly white schools, and consequently minority students would respond quickly to this change in

school quality. There has been a large-scale debate over the effects of desegregation, fueled by Armor's (1972) negative synthesis of several studies. The two major reviews of the desegregation-achievement literature are by Weinberg (1977) and St. John (1975). While Weinberg is seen as a proponent of desegregation and St. John as an opponent of compulsory desegregation, in fact their reviews are similar. Weinberg writes, "Among the studies cited...29 found definite achievement gains by minority students in a desegregated setting; 19 reported no effect." (p. 122.) Crain (1978) summarizes St. John as citing 63 studies: of these, 4 showed negative effects, 37 showed positive effects, 15 showed no statistically significant effects, and 7 showed a mixture of positive and negative effects. The 37 studies finding positive effects are often not unequivocal--they frequently found positive effects in one grade but not another or on one achievement test battery but not a second. But on balance, it appeared that most evaluations of desegregation in terms of achievement are somewhat favorable, but a significant minority show no effects or negative effects. It is not surprising that the studies do not all agree. Many are based on a weak methodology. Most of them measure the impact of desegregation only over a single year, usually the first year of desegregation when things are most unsettled. And of course we should not expect desegregation to work the same way in every situation--desegregation, like any social policy, comes in various forms and can be implemented well or badly. Unfortunately, only one of the studies cited by St. John analyzes desegregation in more than one community so that none of them can be said to represent an aggregate evaluation of desegregation.

Thus the most important studies of the relationship between school racial composition and achievement remain the large-scale cross sectional surveys. The two most important are Equality of Educational Opportunity (Coleman, et al., 1966) and the National Opinion Research Center's evaluation of ESAP in the South (NORC, 1973).

When the Coleman report was done in 1966 almost all southern black students were in segregated schools and the analysis of the impact of desegregation was limited to the northeastern region. After

controls for black students' family background were administered the study found a noticeable positive relationship between the percentage of white students in the classroom and black achievement. Re-analyses of these data produced similar results (U. S. Civil Rights Commission, 1967; Mosteller and Moynihan, 1972). The general conclusion seems to be that the differences in achievement between black students in predominantly white schools and those in black schools was on the order of one-fifth of a standard deviation after social class differences were removed. However, there was little agreement among the analysts about how to interpret this, with many arguing that problems in the low reliability of social class measurement, coupled with the self-selection of high ability black students into white schools, might explain the difference.

The NORC analysis of 200 southern bi-racial high schools found relatively weak effects of school racial composition and indicated that black females in predominantly white schools scored somewhat higher in achievement than those in black schools, but that black males performed poorly in schools which were overwhelmingly white. The NORC and Coleman results are thus largely contradictory.

The importance of achievement test performance in evaluating desegregation has been called into question by Jencks (1972). Achievement tests have been used on the assumption that they measure an ability which is important in adult success; Jencks points out that the relationship between measured test scores and adult income is not very large and concludes that any effort to create racial equality in income by improving education for blacks is doomed to fail.

This suggests that evaluations of desegregation plans should focus upon factors which are more clearly related to adult success. The obvious candidate is educational attainment, but Schwartz's review (1976) cites only two studies of the relationship between school desegregation and college attendance, by Armor (1972) and Crain (1971).

Armor's analysis of the METCO demonstration includes the observation that black students who volunteered to attend predominantly white suburban schools were, at the end of the demonstration, likely

to express a preference for attending four year colleges rather than junior colleges and more prestigious schools rather than less prestigious ones. In his analysis of a retrospective survey of the effects of school racial composition, Crain found that black alumni of predominantly white schools were considerably more likely to finish high school, attend college, and graduate from college. However, Crain's analysis was cross-sectional and is subject to the alternative interpretation that black students who attended predominantly white high schools were doing so because they planned to attend college later and they assumed that the white school would provide a better preparation. This "self-selection" was not tested by Crain.

The NORC survey of southern schools contains questions on educational aspirations addressed to black and white tenth graders and asks principals to estimate the college attendance rates of the graduating seniors of 1971. Unpublished results of that survey indicate that blacks in predominantly white schools were not more likely to plan on college. Again, the southern study contradicts results from northern studies.

While there is little research on the relationship between racial composition of schools and college outcomes, there is considerable research on social class composition of schools and college attendance. This is based upon the research findings that high school students' college plans are strongly influenced by "significant others," including teachers, parents, and peers. (See Sewell, et al., 1970; Haller and Butterworth, 1960; Alexander and Campbell, 1964; and Duncan, et al., 1968.) This has led a number of researchers to hypothesize that a working-class student attending a school where most students are middle-class will be more likely to go to college. This result has been found by Wilson (1959), Turner (1964), Michael (1961), and Boyle (1966), among others. Other researchers have argued that this is not merely the result of working-class students having greater opportunities for friendships with middle-class peers, but is also a result of the academic climate of middle-class schools being different from that in poorer neighborhoods. The most important piece of research here is by McDill, et al. (1969). This would explain why

most of the studies cited above have found that working-class students in middle-class schools had higher achievement test scores as well as higher educational aspirations. These research results have been disputed by Hauser (1970) and by the research of Sewell and Armer (1966) which concluded that the contextual effect of school social class on college aspirations was small. One of the reasons for this is that a middle-class school serves both to encourage and to discourage a working-class student from higher education. The discouragement occurs because the middle-class students are likely to be of higher academic ability than their working-class peers, and the working-class students, doing badly in competition for grades, may decide that they do not have college potential (or may have their teachers decide this for them). This has been labeled a "frog pond" effect by Davis (1966). Meyer (1970), Nelson (1972), and Alexander and Eckland (1975) have all demonstrated that this creates a conflicting set of effects, in that an increase in the average social class of the student body is associated with greater desire to attend college, while an increase in average academic achievement tends to discourage college attandance. Alexander and Eckland, in their analysis of a large 1955 national sample of high school sophomores, conclude that these two effects approximately cancel each other out. Since the importance of each factor will be influenced by a variety of local conditions (such as the average social class of the community, the average college attendance rate, the racial composition of the schools, etc.), it is very likely that studies done at different times or at different locations could produce contradictory conclusions about the relationship between school social class and achievement or college attendance. The literature on the contextual effects of school social class is reviewed by Bain and Anderson (1974).

Since most black students are poorer than most white students, school racial desegregation frequently implies social class desegregation, with whatever benefits that implies for working-class minorities, but racial desegregation may influence black student college performance in other ways. First, a pattern of discriminatory behavior on the part of school counselors and teachers might work to

discourage students in minority schools from college; or it might work to discourage blacks in bi-racial schools from attending college if their white classmates are favored at their expense. Second, opportunities for black students to test themselves in competition with whites may influence their self images or their perceptions of their opportunities in adult life. This hypothesis has been advanced by Crain and Weisman (1972) who argue that blacks who attended predominantly white schools develop a more optimistic view of their life-chances as a result. Finally, for black students who do go on to college, the opportunity to test themselves in a desegregated high school may make it easier for them to cope with college, where most students are going to be white.

The National Longitudinal Survey of the High School Graduating Class of 1972 is the best available data, not only for studying the effects of school racial composition on early adult careers, but for studying a number of other aspects of school desegregation.

The NLS is a large-scale longitudinal survey effort designed to provide information on high school students moving into early adulthood.

The NLS was inaugurated and is conducted by the National Center for Education Statistics (NCES) in the Office of the Assistant Secretary for Education, Department of Health, Education, and Welfare. Planning for the study began in the late 1960s and data collection began in the spring of 1972. A baseline survey was conducted on a nationally representative random sample of 21,600 high school seniors drawn from 1200 high schools.

The first follow-up survey commenced in October 1973 and obtained data from 93 percent of the students in the sample. A second follow-up, in the fall of 1974, obtained a 94 percent response. A third follow-up was to be undertaken in the fall of 1976. In the 1972 baseline survey, questionnaires were also administered to the high school principal and the school counselor.

The large number of schools in the NLS sample makes it possible to locate sufficient schools of various racial compositions for analysis. The sampling of 18 students per school makes it possible

to analyze the impact on each student of the character of the student body. Since the study is a longitudinal panel of early adulthood, it is possible to examine the post-graduation impact of school racial composition on several variables which have previously been identified as important in the literature on race relations and minority achievement. The NLS can be used to study the impact of school racial composition on minority self-esteem and the persistence of this impact into adulthood. The research on this subject has been reviewed by St. John (1975). It would also be possible to study the impact of school racial composition on minority locus of control, and the persistence of school effects after graduation. Coleman (1964) has identified this as an important topic. It would also be possible to use the NLS to analyze the impact of school racial composition on the job hunting behavior of minorities; Crain (1971) has hypothesized that inter-racial school experiences make it possible for blacks to use white acquaintences in job seeking. While the information on quality of the high school attended is in some ways limited, the NLS has considerable potential for evaluating Anglo and minority perceptions of the quality of education of the schools they attended. (For example, one might assess the evaluation black students place upon predominantly white and predominantly black schools.)

The NLS does have some important limitations. Since the panel begins in the twelfth grade, it is not possible to obtain pretest scores which would help us understand the way in which the student has changed during the period of time he was in school. It is also difficult to compare schools which have different drop-out rates. (Since data is gathered only on seniors, a school in which many low achievers drop out may appear to have high test scores if only seniors are studied.) The NLS also has little data on school race relations, either staff attitudes toward desegregation or staff intergroup relations. There is also little data on the desegregation plan.

This last disadvantage has been partially overcome in this analysis by adding to the NLS data data on the racial composition of all schools in each school district in the sample from the 1972 Directory of Public Elementary and Secondary Schools compiled by the Department of Health, Education, and Welfare. This enables us to contrast not only schools of different racial compositions, but districts where most schools are desegregated with districts where few schools are.

We expect to find that a single bi-racial school in an otherwise segregated district will be different from a school which is one of many desegregated schools in the district. In addition, the level of desegregation of the school district is an important variable for analyzing the self-selection hypothesis discussed below. The DHEW directory gives the racial composition for the fall of 1972 of every public schools in all large school districts and a sample of schools in small districts, representing nearly 90 percent of the schools in the NLS sample. We will use these data to compute an overall desegregation index for the district, and also to measure the average percentage white of the school environment of each black student in the district.

We have also added to the NLS data file data on characteristics of the colleges attended by the blacks in the sample. Wagner and Tenison (1976) have assembled data from several documentary sources on each college attended by NLS students as well as other colleges that they applied to. We will use these data to determine the predominant racial composition of the colleges attended by blacks.

THE PROBLEM: BLACK COLLEGE ATTENDANCE AND COLLEGE SURVIVAL RATES

The analysis of black college attendance centers on two dependent variables: the first is the percentage of black students attending a post-secondary school (either a college or a technical/vocational school, either part-time or full-time). We will call this the college attendance rate, although the reader should bear in mind that some of these students are in non-college vocational courses. The measure of college attendance was constructed by using any report of school attendance at any time over the three years. By this definition, slightly more than half of the black high school graduates in this sample went on to higher education. The second dependent variable is the percentage of black students who were college juniors three years after graduation from high school. This dependent variable was constructed by computing the number of students who had been in school for all three years after graduation and who reported that they were classified as juniors by their school. By this definition, only about 15 percent of black high school graduates were making on-time progress toward a college degree. We will call this the college survival rate. Again,

Table 1

Individual-Level Percentages of High School Seniors Attending and Surviving in College, by Region*

	South		North	
	Black	White	Black	White
College Attendance	52%	60%	62%	63%
College Survival	13%	22%	15%	22%
n	(1809)	(5137)	(1092)	(10,842)

*South = Alabama, Arkansas, Delaware, District of Columbia, Florida, Georgia, Kentucky, Louisiana, Maryland, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, Virginia, West Virginia

North = All else

the reader must bear something in mind, since this is not the more common "college retention rate" which uses as a base only entering college students. This is the percentage of all high school seniors who enter and stay in college to become juniors on schedule.

Table 1 compares white and black high school graduates on our dependent variables. In the North (the two righthand columns of Table 1) we see that over half of all white and black high school graduates attend college, with no dramatic difference in the rate of attendance between white and black students. However, we see that 22 percent of white northern high school graduates are juniors three years later compared to only 15 percent of all black students. In the South, we see racial disparity in both the college attendance rates and the percentage of students reaching college junior status.

The high rate of college attendance for southern whites and northern blacks and whites no doubt reflects the increasing numbers of junior colleges and state universities as well as the expansion of four year state teachers colleges to full university status. The result is a dramatic increase in the number of opportunities to attend college. However, these large state universities are characterized by relatively high dropout rates, and only a small fraction of junior college students transfer to a four year college. Obviously many students who interrupt their college career at some point, for whatever reason, will nevertheless obtain baccalaureate degrees. We use here the percentage of students who are juniors on-schedule (without interruption) as the best available indication of the rates of college completion, but it must be understood that this understates the percentage of students who will graduate from college.

Table 1 thus defines our problem--the low college attendance rates of blacks in the South relative to southern white students, and the low rate of attaining junior status for blacks in both the North and the South.

THE ORGANIZATION OF THE REPORT

This report is divided into seven sections. Section II analyzes the relationship between school racial composition and college attendance and college survival rates for blacks. Separate analyses are done for northern and southern high schools. Although the report is focused upon the college outcomes of black

students, parallel data on white students is presented for comparison purposes. Section III analyzes the relationship between school racial composition and black achievement test score performance. Again, the analysis is done separately by region and parallel data for whites are presented.

Section IV constructs a causal model of some of the characteristics of desegregated schools. It focuses upon two key variables--the racial composition of the teaching staff and the grades blacks earn in desegregated schools. We earlier noted that one of the negative effects of attending a high-SES school is the "frog pond" effect wherein students earn lower grades relative to the other students in the school as average school achievement increases. Gerard and Miller (1975) report that in Riverside one of the effects of desegregation was to lower the grades given to minority students. Whereas before desegregation minority students in predominantly minority schools were graded on a curve against other students in the same school, after desegregation these curves were based upon the large number of Anglo students in each school. The result was that grades for both Mexican-American and black students dropped sharply (pp. 82-84). Section IV examines the extent to which lower grades, regardless of actual performance on standard achievement tests, affect black college outcomes.

Section V looks at the characteristics of desegrated schools, particularly the race of the counselors, that determine whether blacks attend college and the kind of college they attend, and the impact of the type of school they attend on their college survival rate.

Any analysis of the impact of a school characteristic on later performance which is not based upon a full-fledged experimental design is subject to the very plausible counter-interpretation of self-selection. In our case this means that if students from a certain type of high school are more likely to attend college, it may be because college-bound high school students chose to attend the high school which they felt gave them the best preparation for college. If this happens, then the high college attendance rates from those high schools do not indicate that the schools have taken an ordinary group of students and motivated or counseled them so as to increase

their chances of attending college. Section VI presents a test of the proposition that the apparent advantages of predominantly white schools in producing high achieving, college-bound black students occur only because highly motivated black students choose to attend them.

Section VII presents the conclusions.

II. SCHOOL RACIAL COMPOSITION AND COLLEGE OUTCOMES

In this section we look at the relationship between school racial composition and college outcomes for blacks. Parallel data for whites are presented for a comparison. The first analysis, shown in Tables 2a-2b, gives the relationship between the proportion white of the high school student body and the probability of a black student attending college, with the student's socioeconomic status controlled.

Socioeconomic status is measured in the NLS with an index which pools data on parents' education, family income, father's occupation, and the existence of various household items which are indicative of personal wealth. These five components are standardized so that each carries approximately equal weight in the scale.* The percentage of white students in the school is reported by the principal.

Table 2a shows the mean ($\bar{x}$) and standard deviation (σ) of the dependent and independent variables, the zero-order correlation (r), the regression coefficient (b), and the standardized regression coefficient (β).**

Looking first at the means of the dependent variable, we see that northern black high school seniors are more likely to attend college than are southerners. The "attend college" figure includes all sorts of post-secondary schooling and may overstate the southern attendance in what we normally think of as higher education institutions. We say this because Alan Wagner and Lawrence Tenison, of the College Entrance Examination Board, matched the colleges attended to data on those colleges from the

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*The reader who is using the NLS data should know that for simplicity of presentation we have transformed the scale to keep its values positive and range smaller.

$$SES_{new} = .001\ SES_{old} + 3$$

**In all regressions in this report, missing cases are omitted in the computations only for those variables where the data are missing. The n reported is the minimum n, and some of computed correlations are based on more than the minimum cases.

higher education directory. They were able to match only 73% of the schools to directory data. The others are missing for several reasons--because the school's name was omitted or illegible, because the student did not enter the school until the third year after graduation (they coded only data from the first follow-up questionnaire), or because the school was a vocational school not included in the higher education directory. Wagner and Tenison found data only for 33% of the southern blacks and 44% of the northern blacks. This is a more conservative, and perhaps equally accurate, count of the students who attended college. If we use as our dependent variable not whether the student said he attended school, but whether Wagner and Tenison were able to identify a college that he attended, we get essentially the same results: the standardized coefficient in the South is -.033 instead of the -.055 in Table 2a, and in the North the coefficient changes from +.050 to +.051.

Table 2a shows no significant relationship between high school percentage white and college attendance. The top panel of Table 2a shows the expected positive correlation between SES and college attendance ($r = .231$) and a weak, nonsignificnat negative relationship between school percentage white and college attendance ($r = .035$). When the two variables are combined in a regression equation, the pattern remains unchanged; the standardized regression coefficients are identical to the correlation coefficients. The lower

Table 2a

Regression Equations Predicting Black Individual-Level College Attendance from Black SES and School Percent White, by Region

	SOUTH				
	$\bar{X}$	σ	r	b	β
Dependent Variable:					
Black College Attendance	48.09	49.98	-	-	-
Independent Variables:					
Black SES	2.304	.5915	.231	19.5	.231*
School Percent White	44.03	31.81	-.035	-.055	-.035

r^2 = .055
n = 1707

*p<.05

	NORTH				
	$\bar{X}$	σ	r	b	β
Dependent Variable:					
Black College Attendance	56.14	49.64	-	-	-
Independent Variables:					
Black SES	2.547	.5581	.189	16.5	.185*
School Percent White	42.85	33.71	.057	.050	.034

r^2 = .037
n = 991

*p<.05

panel of Table 2a shows the data for the North. SES is again related to college attendance although the relationship is weaker. School percentage white is positively related to college attendance for blacks, but the relationship is not significant.

Table 2b shows the same equations for white students. In the South, we find a strong relationship between student SES and college attendance, and no relationship between school racial composition and college attendance. In the North, we find a slightly weaker relationship between SES and college attendance and a negative relationship between school percentage white and college attendance. The table shows a regression coefficient for school percentage white of -.074, indicating that a white student in a 50 percent white school has a probability of attending college 3 or 4 percent higher than a student of similar SES in an all-white school. We will withhold comment on this perhaps surprising finding until other related data in Tables 3, 5, and 6 have been presented.

Tables 3a and 3b use as dependent variables the proportion of students who were college juniors three years after graduation from high school. These data are taken from the second follow-up survey administered in 1974. This variable is referred to as "college survival," but it should be noted that this is a rather stringent measure of survival, since many students who graduate from college take longer than four years to do so, and were not juniors during their third year after high school. The top panel shows a relationship in the South similar to that for college attendance--a positive relationship with SES and a nonsignificant negative relationship with percent white. In the lower panel of Table 3a we see the first significant relationship between school racial composition and a black college outcome: the table indicates in the North that the higher the percentage white of the school, the more likely black students are to survive in college. Since we saw in Table 2a only a slight tendency for blacks from predominantly white schools to attend college more often, this indicates that black graudates of predominantly black high schools either attend four-year colleges but drop out more, or else attend two-year schools and vocational schools and are less likely to transfer to four-year schools.

Table 2b

Regression Equations Predicting White Individual-Level College Attendance from White SES and School Percent White, by Region

	SOUTH				
	X	σ	r	b	β
Dependent Variable:					
White College Attendance	56.49	49.58	-	-	-
Independent Variables:					
White SES	3.009	.7325	.388	26.3	.388*
School Percent White	80.57	18.40	.010	-.016	-.006

r^2 = .151
n = 4909
*p<.05

	NORTH				
	X	σ	r	b	β
Dependent Variable:					
White College Attendance	59.35	49.12	-	-	-
Independent Variables:					
White SES	3.097	.6519	.327	24.7	.328*
School Percent White	91.79	14.03	-.006	-.074	-.021*

r^2 = .107
n = 10,197

*p<.05

Table 3a

Regression Equations Predicting Black Individual-Level College Survival from Black SES and School Percent White, by Region

	SOUTH				
	X	σ	r	b	β
Dependent Variable:					
Black College Survival	12.44	33.01	-	-	-
Independent Variables:					
Black SES	2.304	.5915	.194	10.8	.194*
School Percent White	44.03	31.81	.031	-.032	-.031

r^2 = .039
n = 1707

*p<.05

	NORTH				
	X	σ	r	b	β
Dependent Variable:					
Black College Survival	13.37	34.05	-	-	-
Independent Variables:					
Black SES	2.547	.5581	.177	10.2	.167*
School Percent White	42.85	33.71	.094	.075	.074*

r^2 = .037
n = 991

*p<.05.

Table 3b shows the parallel results for white college survival. Again, SES has a positive effect in both regions. In the South, there is no relationship between school racial composition and white college survival. In the North, there is a significant positive relationship indicating that whites from predominantly white schools are more likely to survive in college. Comparing the lower panel of Table 3b to the lower panel of Table 2b we now see that the white graduate of, for example, a 50 percent white school is more likely to attend college but is either more likely to attend a vocational school or junior college or else is more likely to drop out of a four-year college. We will postpone discussing this until after we have examined Tables 5 and 6.

Thus far, we have found one significant relationship between school racial composition and black college outcomes--the positive coefficient between school percentage white and college survival in the North. Having shown that this relationship is statistically significant, let us consider its substantive significance. To do this, we present in Table 4 a simulated table, showing the probabilities of college attendance and college survival for southern and northern blacks coming from from schools which are 0 percent white and 90 percent white. These expected probabilities are derived from the regression equations shown in Tables 2a and 3a, by simply assuming that a black student had an SES score equal to the mean for his region and substituting values of 0 and 90 for percent white in the equation. When we do this we find that in the North, a black alumnus of an all-black school has a 10 percent probability of being a college junior three years after graduation, while a black student of the same SES graduating from a 90 percent white school has a 17 percent probability. In other words, the black student from the predominantly white school has a 5:3 better change of becoming a college junior in three years than does a black student of the same social status attending an all-black school.

SCHOOL RACIAL COMPOSITION AND COLLEGE OUTCOMES USING AN AGGREGATE HIGH SCHOOL ANALYSIS

In the remainder of this section our unit of analysis will be the high school rather than the individual student. There are two reasons

Table 3b

Regression Equations Predicting White Individual-Level College Survival from White SES and School Percent White, by Region

	SOUTH				
	$\bar{x}$	σ	r	b	β
Dependent Variable:					
White College Survival	20.71	40.53	-	-	-
Independent Variables:					
White SES	3.009	.7325	.338	18.7	.338*
School Percent White	80.57	18.40	.013	.004	.002

r^2 = .114
n = 4909

*p <.05

	NORTH				
	$\bar{x}$	σ	r	b	β
Dependent Variable:					
White College Survival	20.40	40.30	-	-	-
Independent Variables:					
White SES	3.097	.6519	.285	17.6	.284*
School Percent White	91.79	14.03	.041	.080	.028*

r^2 = .082
n = 10,197

*p <.05

Table 4

Black Individual-Level Percentages of College Attendance and College Survival by High School Percent White and Region, Statistically Controlled for SES

	SOUTH		NORTH	
	School Percent White		School Percent White	
	0%	90%	0%	90%
College Attendance	50.51	45.56	53.99	58.49
College Survival	13.85	10.97	10.16*	16.91*

*$p<.05$

NOTE: Percentages are derived from unstandardized regression coefficients for school percent white shown in tables 2a and 3a.

why an analysis at the high school level is preferable to an analysis at the individual level. The first is that it is logically consistent with the hypothesis we are testing. We are concerned with evaluating the relationship between a characteristic of the high school (in this case its racial composition) and its productivity (in this case meaning the percentage of its black students who go on to college). Thus it is conceptually somewhat clearer to carry out the analysis at the high school level. A second and more important reason is that an analysis at the school level makes it easier to incorporate additional variables and eliminate certain sources of error.

For some analyses the use of a computer tape in which each unit of analysis is a school rather than a student will make no difference, for other analyses the results will differ and it is important to understand why. Consider, for example, the simple case of computing a linear regression equation predicting college attendance from high school racial composition. If in an individual-level analysis we scored the dependent variable (1 = attended college, 0 = no) the resulting regression equation would be:

College attendance = a(school % white) + C

If we aggregate the data to the school level, the college attendance variable will be replaced by a school-level variable, the percentage of studentr attending college. The school racial composition which was already an aggregate (school-level) variable will not change. The result is the following regression equation:

Percentage attending college = a(school % white) + C.

For northern students the coefficient a = .08, indicates that 8 percent more students would attend college from a 100 percent white school than from a 0 percent white school. In this example, the unstandardized coefficient a and the regression constant C will be

identical* in both equations. But since the variance of the individual college attendance variable is greater than the variance of the corresponding school-level variable, the standardized regression coefficient will be considerably higher in the aggregate equation than in the individual equation--in this case about twice as high. This in turn means that the aggregate equation will show a higher percentage of variance explained since we are not explaining the variance in the individual propensity to attend college but rather the variance that lies between schools.

A more complex example arises when we aggregate individual characteristics to the high school level to create independent variables as well as the dependent variable. For example, in the case that follows we will use the mean socioeconomic status of all black respondents from each school as an independent variable along with school racial composition. At the individual level, socioeconomic status is related to college attendance, presumably because middle class families are more likely to encourage their children to go to college, or better able to finance a college education or because their children are better students.

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*More precisely, if x percent of the students who graduate from schools which are 90-100 percent white attend college, then the mean percentage of students attending college from high schools 90-100 percent white, weighted by the number of students in the sample from each school, must also be x, since if p_{ij} is the probability of the jth student from school i attending college, and n_i is the number of students in school i, then the relationship

$$\frac{\sum_i \sum_j p_{ij}}{\sum_i n_i} = \frac{\sum_i n_i \left(\frac{\sum_j p_{ij}}{n_i} \right)}{\sum_i n_i}$$

is an identity. Similarly, the mean proportion of students attending college from schools with 0-10 percent white students would also equal the proportion of students from these schools who attended college. This implies that the individual-level and aggregate-level unstandardized regression coefficients will be identical presuming that there is homoscedasticity in the data.

Let us assume that a student with a socioeconomic status score of 3 has a 20 percent likelihood of attending college, while a student with a socioeconomic status score of 6 has a 50 percent likelihood. This implies that a school with a mean student socioeconomic status of 3 (making certain simplifying assumptions about the normality and linearity of the data) would have 20 percent of its students attending college while a high school with a mean socioeconomic status score of 6 would have 50 percent of its students attending college. In fact, the school with the higher socioeconomic status should send more than 50 percent of its students to college, while the school with the lower mean socioeconomic status would send fewer than 20 percent. There are two reasons for this. First, the students in the high-SES school may influence each other (the SES contextual effect discussed in Section I). Second, socioeconomic status is measured with error in these data as in all data, and that error is likely to be correlated with school mean SES. The working-class student in a middle-class school may have a socioeconomic status score identical to a working-class student in a working-class school elsewhere in the city, but it is likely that errors of measurement have understated the social status of the student in the middle-class school. If he is a resident of a middle-class neighborhood then, despite his parents' low level of education and income, his family is more middle-class than a student's whose parents have the same education and SES but live in a poorer area. The working-class student in the middle-class school will tend to have a slightly higher "true" social status than is reported by the measurement. But this means that his probability of college attendance should be slightly higher. Both hypotheses lead us to expect that the unstandardized regression coefficient relating mean school SES to percentage of students attending college will be higher than the unstandardized individual-level coefficient relating individual SES to individual probability of attending college. This is in fact the case. In our data for northern black students, an increase of one unit in socioeconomic status increases the probability of a student attending college by 16 percent, while a one unit increase

in the mean SES of the black students in the school would increase the proportion of blacks attending college from that school by 21 percent.*

In carrying out the high school-level analysis, additional variables were created. The Directory of Public Elementary and Secondary Schools, Fall 1972, published by the Department of Health, Education and Welfare was used to obtain the racial composition of the school and the racial composition of the other schools in the same district. At the same time the total enrollment of all students in public high schools in the district was obtained. Data on the college plans and SES of individual black and white students was aggregated to the school level (using the "aggregate" subprogram of the SPSS computer package).

There remains one serious problem with an aggregate analysis. While there are an equal number of students from each school, there are not an equal number of black students; some schools have 18, others only 1. But the more students there are, the more accurately we measure the schools' "productivity" (i.e., the mean college attendance and survival rate). We chose the most conservative approach, which is to weight each school by the number of black students surveyed (or the number of white students, when white outcomes are studied). Thus, a school with 18 students is treated in the regression as 18 identical data points, while the school with 1 student is treated as a single point. (The computation of the test of significance is based on the actual number of schools, however.)

One problem with the NLS is that a number of students did not complete one or another questionnaire, or did not complete a portion of one of the questionnaires. This makes the question of how many

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*More correctly, since we usually have no more than 18 students from each school (occasionally there are more, because of oversampling to allow for sample attrition), we are correlating the college attendance rate of the students surveyed in each school with the mean socioeconomic status of that group of students. This suggests that with a larger sample of students, the aggregate regression coefficient would be even larger.

students we are analyzing in an aggregate analysis somewhat ambiguous. We elected to use a conservative measure of the number of students completing the second follow-up questionnaire, one which would be reasonable no matter which part of that questionnaire was being analyzed.

The decision was made to weight each school by the number of black and white students who answered the self-esteem questions in the Second Follow-Up Questionnaire. This is a somewhat conservative count of the number of students, since the number of students who provided adequate data about their college attendance is greater than the number who completed the self-esteem items. If all students who provided college information had also provided the self-esteem data and data for all schools was available from the Department of Health, Education and Welfare, then the number of cases appearing in the weighted aggregate analysis would necessarily be identical to the number of cases appearing in Tables 2a, 2b, 3a, and 3b. However, the DHEW directory does not contain data on private schools (12 percent of the NLS sample are from private schools) and contains only a sample of data from school districts containing less than 3,000 students.

In the baseline and first follow-up surveys, 21,222 respondents were asked to specify their race--2,902 blacks and 15,979 Anglo-Americans. The remaining 11 percent include Orientals, Native Americans, Hispanic-Americans, and persons who did not identify their ethnicity. Of the 2,902 blacks and 15,979 Anglos, 2,310 blacks (79 percent) and 13,486 Anglos (84 percent) completed the self-esteem questions. Of these, 159 blacks and 2,678 Anglos were in schools for which no DHEW directory data were available. Since these schools are mainly private schools or schools in very small districts, it is understandable that the students omitted here are overwhelmingly Anglo. Finally, one black student provided insufficient data on college attendance leaving a final sample to be used in weighting the aggregate analysis of 2,150 blacks (74 percent of the original population) and 10,808 Anglos (68 percent of the original population).

Of the 1,318 schools in the NLS sample, 106 had no white students, or at least none fell into the original sample of 18 students from

each school. Of the remainder, eight schools had no second year follow-up self-esteem data and an additional 223 schools had no DHEW directory data. Thus when all-black schools, schools with no follow-up data, and private schools in very small districts are eliminated, the final sample contains 981 schools (376 South, 605 North) with white data available. For blacks, 745 of the original 1,318 schools had no black students. An additional 36 schools had no second year follow-up data on college attendance and self-esteem. Of the remaining schools, 52 are dropped because there were no DHEW data on school racial composition. This leaves a final sample of 484 schools with black data, 283 in the South and 201 in the North.

Tables 5a and 5b present the regression equations predicting black and white college attendance in the North and South, using the school mean SES of students of the same race, the school racial composition, and the natural log of the school district's population (measured by the total number of high school students). The mean college attendance and survival rates are slightly higher in Tables 5 and 6 in the aggregate

analysis than they were in the individual-level analysis of Tables 2 and 3; this may reflect a bias introduced by the omission of private schools and small school districts, or, more likely, a bias introduced by using the completed self-esteem questions as the weighting variable.

Table 5a shows a positive relationship between school mean black SES and school mean college attendance rates. As expected this relationship is stronger than the parallel relationship at the individual level (b = 22.2, compared to 19.5 in Table 2a). We also see that black students in larger school districts are more likely to attend college although this variable is highly correlated with SES (large districts have higher SES students), and thus its independent contribution is small. Finally, we see that the negative relationship between the percentage white of the school and college attendance which we saw for the South at the individual level in Table 2a remains, but is still not significant.

In the lower panel of Table 5a we see the relationship in the North. With mean black SES and school district size controlled, we see a non-significant positive relationship between school percentage white and college attendance.

Table 5b presents the parallel data for whites. There are some important differences here. In the South we find that the relationship between school district size and college attendance is negative--the larger the district, the less likely whites are to attend college. The relationship between school percentage white and white rates of college attendance is very near zero. In the North, the relationship between school district size and college attendance is positive, (not significant), and the relationship between school percentage white and college attendance is negative (and also not significant).

Table 6a shows the regression equations predicting college survival rates for blacks. We again see positive coefficients associated with school mean black SES. In the South, survival rates from large districts are lower than from small districts once SES and racial composition are controlled. The relationship between school percentage white and black college survival is negative and significant in the South. In the North, the relationship between school percentage white and college survival is positive, significant,

Table 5a

Regression Equations Predicting Black School-Level College Attendance from School Mean Black SES, School Percent White and School District Size, by Region

	SOUTH				
	$\bar{x}$	σ	r	b	β
Dependent Variable:					
Mean Black College Attendance	51.68	24.66	-	-	-
Independent Variables:					
Mean Black SES	2.316	.3609	.351	22.2	.325*
School District Size	9.853	1.584	.222	.758	.049
School Percent White	43.36	30.70	-.106	-.055	-.069

r^2 = .132
Weighted n = 1348
Unweighted n = 283
*p <.05

	NORTH				
	$\bar{x}$	σ	r	b	β
Dependent Variable:					
Mean Black College Attendance	61.72	25.74	-	-	-
Independent Variables:					
Mean Black SES	2.554	.3558	.319	21.3	.295*
School District Size	11.45	1.726	.062	1.41	.095
School Percent White	39.04	33.92	.124	.083	.109

r^2 = .114
Weighted n = 803
Unweighted n = 201
*p<.05

Table 5b

Regression Equations Predicting White School-Level College Attendance from School Mean White SES, School Percent White and School District Size, by Region

	SOUTH				
	$\bar{X}$	σ	r	b	β
Dependent Variable:					
Mean White College Attendance	59.99	21.19	-	-	-
Independent Variables:					
Mean White SES	3.018	.4377	.692	36.5	.754*
School District Size	9.546	1.446	.165	-2.18	-.149*
School Percent White	81.14	17.92	.027	-.002	-.002

r^2 = .497
Weighted n = 3894
Unweighted n = 376
*p<.05

	NORTH				
	$\bar{X}$	σ	r	b	β
Dependent Variable:					
Mean White College Attendance	63.18	19.43	-	-	-
Independent Variables:					
Mean White SES	3.102	.3520	.554	30.8	.558*
School District Size	9.220	1.615	.116	.655	.054
School Percent White	94.24	12.04	-.003	-.087	-.054

r^2 = .315
Weighted n = 6914
Unweighted n = 605
*p<.05

Table 6a

Regression Equations Predicting Black School-Level College Survival from School Mean Black SES, School Percent White and School District Size, by Region

	SOUTH				
	$\bar{X}$	σ	r	b	β
Dependent Variable: Mean Black College Survival	13.36	16.37	-	-	-
Independent Variables:					
Mean Black SES	2.316	.3609	.323	17.7	.390*
School District Size	9.853	1.584	.060	-1.71	-.165*
School Percent White	43.36	30.70	-.084	-.068	-.127*

r^2 = .127
Weighted n = 1348
Unweighted n = 283
*p<.05

	NORTH				
	$\bar{X}$	σ	r	b	β
Dependent Variable: Mean Black College Survival	15.38	21.31	-	-	-
Independent Variables:					
Mean Black SES	2.554	.3558	.194	9.52	.159*
School District Size	11.45	1.726	.034	1.21	.098*
School Percent White	39.04	33.92	.164	.110	.175*

r^2 = .063
Weighted n = 803
Unweighted n = 201
*p<.05

and is the largest relationship found thus far: b = .110. Whereas in the South the highest college survival rates were from black schools in small districts, in the North the highest rates are from predominantly white schools in large districts.

Finally, Table 6b shows the regression equations predicting white college survival in each region. In both the South and the North, the regression coefficients associated with school mean SES are quite large. In both regions, school district size is negatively related to survival. In the South there is no relationship between school percentage white and college outcomes. In the North the relationship is negative, indicating that whites from bi-racial schools are more likely to remain in college than those graduating from all-white schools. This is the only case where the aggregate-level analysis produces a relationship between percentage white and the dependent variables which is different at the aggregate and individual levels. At the individual level, the relationship between northern white college survival and school percentage white was positive; at the aggregate level it is negative. Neither coefficient is significant, but this difference in sign shows how the aggregate and individual analyses differ. In both the individual and aggregate equations, the zero-order relationship between school percentage white and college survival is positive. Whites graduating from predominantly white schools are more likely to be college juniors three years later. At the individual level, a control on SES does not affect this relationship. However, at the aggregate level a control on school mean SES and school district size together manages to reverse the relationship. This implies that the low college survival rate of whites graduating from bi-racial schools indicates not so much an inferior quality of education, but that big-city schools where most whites are working-class (as is the case in bi-racial northern schools) have lower college survival rates--perhaps due to the large numbers of junior colleges in the urban North. The whites from predominantly black schools are less likely to finish college, but this has little to do with the presence of black students; it has to do with the contextual effects of a white working-class environment in the school and the college opportunities available in large northern cities.

Table 6b

Regression Equations Predicting White School-Level College Survival from School Mean White SES, School Percent White And and School District Size, by Region

	SOUTH				
	$\bar{X}$	σ	r	b	β
Dependent Variable:					
Mean White College Survival	22.29	16.03	-	-	-
Independent Variables:					
Mean White SES	3.018	.4377	.575	22.9	.626*
School District Size	9.546	1.446	.137	-1.37	-.124*
School Percent White	81.14	17.92	.027	.003	.004

r^2 = .343
Weighted n = 3894
Unweighted n = 376
*p<.05

	NORTH				
	$\bar{X}$	σ	r	b	β
Dependent Variable:					
Mean White College Survival	21.94	16.10	-	-	-
Independent Variables:					
Mean White SES	3.102	.3520	.489	22.9	.501*
School District Size	9.220	1.615	.001	-.591	-.059
School Percent White	94.24	12.04	.034	-.080	-.060

r^2 = .243
Weighted n = 6914
Unweighted n = 605
*p<.05

With this one exception the aggregate and individual analyses are quite consistent with each other. In seven out of eight comparisons, the regression coefficient linking SES to college outcomes is larger in the aggregate than in the individual analysis. (The one exception is northern black college survival; but if school district size were omitted from the equation the regression coefficient for SES would be larger at the aggregate level). Similarly, the relationship between school percentage white and college outcomes is the same at the individual and aggregate levels in seven cases; the exception is for white northern college survival, discussed above.

Considering all of the regression equations together, we see a fairly clear pattern. In every case, the regression coefficient for white SES on white college outcomes is greater than the corresponding coefficient for blacks. This suggests that social class is a less important factor among blacks than among whites, which does not seem implausible. We also see that in every case, the regression coefficient for SES is greater in the South than in the North. This would suggest that equality of educational opportunity is greater in the North, which also does not seem implausible. There seems to be no consistent relationship between school district size and the probability of attending college, but there does seem to be a negative relationship between district size and college survival. This is true in three of four cases, the exception being northern blacks. In northern cities, the growth of the college-age population has been largely accommodated through the creation of junior colleges. We will see in Section V that students who enroll in junior colleges are not very likely to transfer to a four year college. The exception for northern urban blacks may reflect the difficulties that blacks living in small cities have in attending college. In small cities, the most convenient college opportunity may be in a predominantly white residential state university, where blacks may experience even more difficulty completing college than they would in an urban junior college or commuter college.

Finally, we see a consistent relationship between school percentage white and college outcomes. For whites in the South, there is no

significant relationship between school racial composition and either college attendance or college survival. In the North, whites from bi-racial schools are more likely to attend college and to remain in college. This finding may reassure those readers who are concerned about the quality of education for whites in bi-racial schools.

For blacks in the South, attending predominantly white schools is associated with lower college attendance and survival rates. In the North, blacks who attend predominantly white schools are more likely to attend college and more likely to stay in college.

It is important to note that the relationships between school percentage white and college outcomes are different for whites and blacks. In the North, the relationships are in the opposite direction; in the South, the relationships are negative for blacks and zero for whites. This is important, since it tends to rule out an explanation based on a simple quality-of-education hypothesis. If predominantly white schools were consistently better or consistently worse in preparing students for college, we would find the same effects for both races. Instead we find in the South a negative effect for blacks only: desegregated schools are satisfactory environments for whites but not for blacks. In the North, we find a positive desegregation effect: each race benefits from attending school with the other.

Table 7, which is identical in format to Table 4, shows the percentage of black students attending and surviving in college by school racial composition. The differences are slightly larger than those shown in Table 4. In Table 4 we saw that northern blacks from predominantly white schools were 4 percent (58 vs. 54) more likely to attend college than blacks from black schools. In Table 7, the college attendance rate from predominantly white schools is 66 percent compared to 58 percent for black schools, a difference of 8 percent. The use of aggregate socioeconomic status and school district size as additional controls has isolated a stronger relationship between college outcomes and high school racial composition. Similarly, Table 4 showed northern white schools as having a 7 percent higher black college survival rate than all-black schools; Table 7 shows a difference of 10 percent. In the South, the earlier differences favoring black schools were

Table 7

Black School-Level Percentages of College Attendance and College Survival by High School Percent White and Region, Statistically Controlled for SES and School District Size

	South		North	
	School Percent White		School Percent White	
	0%	90%	0%	90%
College Attendance	54.06	49.11	58.48	65.95
College Survival	16.31*	10.19*	11.09*	20.99*

*p<.05

NOTE: Percentages are derived from unstandardized regression coefficients for school percent white shown in tables 5a and 6a.

5 percent in the college attendance rate and 3 percent in the college survival rate. In Table 7, these differences are 5 and 6 percent respectively.

We can see from this analysis a clear regional interaction--in the North the highest college attendance rate for blacks is from white schools; in the South from black schools. The largest relationship is in the college survival rates of northern blacks, where alumni of predominantly white schools are nearly twice as likely to become college juniors in three years.

OTHER MEASURES OF SCHOOL RACIAL COMPOSITION AND OF DESEGREGATION

Thus far we have used only the racial composition of the high school. In this analysis we will add racial composition of earlier grades as reported by black students and also measures of extent of district desegregation. The data used are student responses to the questions: "Were you ever 'bused' to school for the purpose of racially integrating or racially balancing the student body of the school?" (separate responses for elementary and secondary grades), and "When you were in the first, sixth, ninth, and twelfth grades, about what percentage of the students in your class were white or Caucasian?" In addition, the Directory of Public Elementary and Secondary Schools was used to compute an index of dissimilarity for the racial composition of all high schools in the district. The index, best known for its use by Karl and Alma Taeuber in their analyses of school and residential segregation (1965), is a statistical measure which can be interpreted as the percentage of students of either race who would have to be reassigned in order to give every school the same racial composition. The index ranges from 0 to 100. Values from .75 to .90 are typical of large segregated districts, values of .75 or lower are typical of smaller districts and scores below .40 generally occur only as a result of a desegregation plan (see Kirby et al., 1973).

Table 8a summarizes eight separate southern regression analyses, with college attendance as the dependent variable and school district size and mean school SES entered in each case. One additional independent variable is entered in turn in the equations.

Table 8a

Regression Equations Predicting Black School-Level College Attendance from Mean Black SES, School District Size and Integration Variables, South

	SOUTH				
	$\bar{X}$	σ	r	b	β
Dependent Variable:					
College Attendance	51.68	24.66	-	-	-
Independent Variables:					
Mean Black SES	2.316	.3609	.351	21.5	.315*
School District Size	9.853	1.584	.222	1.25	.081
Bused Grades 1-6	2.320	7.010	-.094	(-.306)	(-.087)
Bused Grades 7-12	23.79	27.66	-.027	(.032)	(.036)
Percent White Grade 1	1.885	4.520	.020	(-.447)	(-.082)
Percent White Grade 6	2.823	7.419	.087	(.023)	(.007)
Percent White Grade 9	11.65	19.32	.020	(-.050)	(-.039)
Percent White Grade 12	35.97	31.74	-.095	(-.049)	(-.063)
School Percent White	43.36	30.70	-.106	(-.055)	(-.069)*
Dissimilarity Index	.4114	.2690	.239	(20.5)	(.224)

r^2 = .128
Weighted n = 1347
Unweighted n = 282
*p<.05

NOTE: Percent white by grade means and standard deviations are estimated from the original data. Students were asked to place their class on an eight point scale where 0 = 0% and 7 = 100% white. Parentheses represent the Beta if this variable were to be entered in the equation immediately following school district size. The r^2 for the equation was computed using only the dependent variable and the first two independent variables.

For simplicity, the coefficients for SES and district size are shown only once, representing their value when no additional variables are entered in the equation; in parentheses below SES and district size are the regression coefficients for the eight different independent variables when each of them is placed alone in an equation with SES and district size. For example, the next to the last line of the table shows the value of the standardized and unstandardized regression coefficients when school percentage white from the DHEW directory is entered in the equation with SES and school district size. The coefficients are, of course, the same ones already reported in Table 5a for southern college attendance.

The mean values of the eight independent variables provide a history of school desegregation in the South as of 1972. For example, we find that only 2 percent of black students reported being bused for desegregation purposes during elementary school, while 24 percent report being bused in secondary school. This reflects the fact that desegregation did not begin in earnest until the late 1960s when these students were in high school. Similarly, the average number of white students in class with each black in the first grade is only 2 percent. This increases to 3 percent in the sixth grade, 12 percent in the ninth grade and 36 percent in the twelfth grade. Apparently most of the black students in our sample have experienced only a couple of years of desegregation at the time they finished high school. The difference between the student-reported percentage white at grade twelve and the school percentage white for the following fall reported by the DHEW directory reflects a combination of segregation within classrooms in the school and a perceptual bias on the part of students, who tend to remember more students of their own race than may have actually been present. The last line is the school district index of dissimilarity or Taeuber index for 1972 which shows a rather low mean of .41.

Six of the eight independent variables show negative effects of desegregation although only one is statistically significant. (A positiye sign for the Taeuber dissimilarity index indicates a negative desegregation effect.) A high proportion of students bused in elementary school, a high percentage white in grade one, nine or twelve, a high percentage white reported by the DHEW directory, and a low index of

dissimilarity are all associated with lower probabilities of black students attending college.

Table 8b shows a noticeably different pattern for the North. Looking first at the means, we see a very small percentage of students saying that they were bused. Although the percentage who were bused in elementary school (4 percent) is higher than the corresponding figure for the South, the percentage saying that they were bused in secondary school is much lower than in the South. The average percentage white of the classroom of each black student increased slowly from 17 percent in the first grade to 31 percent in grade twelve and probably reflects nothing more than the desegregation which occurs as a result of the increasingly large attendance zones as one goes from elementary school to junior High school to high school. We again see that the self-reported racial composition is considerably lower than the actual school racial composition. Finally, we see an index of dissimilarity which is noticeably higher than in the South.

Six of the eight regression coefficients are significant and show positive desegregation effects. The more students who were bused for desegregation in elementary school, the higher the percentage white in any grade, and the higher the percentage white of the high school as reported by DHEW, the more likely students are to attend college.

Table 8c shows the southern analysis of college survival and is consistent with Table 8a. There are three significant effects, all indicating that the greater the amount of contact with whites, the lower the black college survival rate.

Finally, Table 8d shows the college survival analysis for northern blacks and again shows a consistent pattern. All five measures of school racial composition are positively related to college survival. However, neither measure of the percentage of students bused for desegregation nor the district index of dissimilarity are associated with higher college survival rates. This raises a question as to whether

Table 8b

Regression Equations Predicting Black School-Level College Attendance from Mean Black SES, School District Size and Integration Variables, North

	NORTH				
	$\bar{X}$	σ	r	b	β
Dependent Variable:					
College Attendance	61.72	25.74	-	-	-
Independent Variables:					
Mean Black SES	2.554	.3558	.319	22.93	.317*
School District Size	11.45	1.726	.062	.740	.050
Bused Grades 1-6	3.940	10.30	.156	(.330)	(.132)†
Bused Grades 7-12	7.540	18.29	.077	(.025)	(.018)
Percent White Grade 1	17.13	22.25	.197	(.266)	(.230)*
Percent White Grade 6	18.49	23.72	.231	(.277)	(.255)*
Percent White Grade 9	27.82	29.01	.228	(.203)	(.229)*
Percent White Grade 12	30.65	31.65	.147	(.106)	(.130)†
School Percent White	39.04	33.92	.124	(.083	(.109)
Dissimilarity Index	.5531	.2550	-.048	(-7.37)	(-.073)

r^2 = .104
Weighted n = 803
Unweighted n = 201
*p <.05
†p <.05, one-tail

NOTE: Percent white by grade means and standard deviations are estimated from the original data. Students were asked to place their class on an eight point scale where 0 = 0% and 7 = 100% white. Parentheses represent the Beta if this variable were to be entered in the equation immediately following school district size. The r^2 for the equation was computed using only the dependent variable and the first two independent variables.

Table 8c

Regression Equations Predicting Black School-Level College Survival from Mean Black SES, School District Size and Integration Variables, South

	SOUTH				
	$\bar{X}$	σ	r	b	β
Dependent Variable:					
College Survival	13.36	16.37	-	-	-
Independent Variables:					
Mean Black SES	2.316	.3609	.323	16.8	.371*
School District Size	9.853	1.584	.060	-1.10	-.107
Bused Grades 1-6	2.320	7.010	-.027	(-.042)	(-.018)
Bused Grades 7-12	23.79	27.66	-.050	(-.007)	(-.011)
Percent White Grade 1	1.885	4.520	.033	(-.196)	(-.054)
Percent White Grade 6	2.823	7.419	.025	(-.115)	(-.052)
Percent White Grade 9	11.65	19.32	-.009	(-.094)	(-.111)†
Percent White Grade 12	35.97	31.74	-.027	(-.034)	(-.066)
School Percent White	43.36	30.70	-.084	(-.068)	(-.127)*
Dissimilarity Index	.4114	.2690	.099	(10.9)	(.179)

r^2 = .113
Weighted n = 1347
Unweighted n = 282
*p<.05
†p<.05, one-tail
NOTE: Percent white by grade means and standard deviations are estimated from the original data. Students were asked to place their class on an eight point scale where 0 = 0% and 7 = 100% white. Parentheses represent the Beta if this variable were to be entered in the equation immediately following school district size. The r^2 for the equation was computed using only the dependent variable and the first two independent variables.

Table 8d

Regression Equations Predicting Black School-Level College Survival from Mean Black SES, School District Size and Integration Variables, North

	NORTH				
	$\bar{X}$	σ	r	b	β
Dependent Variable:					
College Survival	15.38	21.31	-	-	-
Independent Variables:					
Mean Black SES	2.554	.3558	.194	11.6	.193*
School District Size	11.45	1.726	.034	.320	.026
Bused Grades 1-6	3.940	10.30	.053	(.079)	(.038)
Bused Grades 7-12	7.540	18.29	.079	(.052)	(.045)
Percent White Grade 1	17.13	22.25	.159	(.180)	(.188)*
Percent White Grade 6	18.49	23.72	.242	(.255)	(.284)*
Percent White Grade 9	27.82	29.01	.186	(.150)	(.204)*
Percent White Grade 12	30.65	31.65	.195	(.143)	(.212)*
School Percent White	39.04	33.92	.164	(.110)	(.175)*
Dissimilarity Index	.5531	.2550	-.002	(-.669)	(-.008)

r^2 = .038
Weighted n = 803
Unweighted n = 201
*p<.05

NOTE: Percent white by grade means and standard deviations are estimated from the original data. Students were asked to place their class on an eight point scale where 0 = 0% and 7 = 100% white. Parentheses represent the Beta if this variable were to be entered in the equation immediately following school district size. The r^2 for the equation was computed using only the dependent variable and and first two independent variables.

intentional desegregation plans in the North have had the same effect as desegregation resulting from assignment of black and white students to nearby bi-racial schools. However, so little intentional desegregation had occurred in the North by 1972 it is unlikely that there is a sufficiently large number of cases for a convincing analysis.

SUMMARY

The two largest studies of school racial composition and black college outcomes, show that in the North, blacks were more likely to attend college if they graduated from predominantly white high schools (Crain and Weisman [1972]), while in the South blacks graduating from predominantly white schools were less likely to attend college (NORC, 1973). What previously appeared to be a contradiction now seems to be a genuine regional interaction. It is a regrettable irony that the region of the country which has experienced the greatest amount of desegregation is also the one where the effects of desegregation are negative.

Using a school-level regression analysis, we find that blacks attending predominantly white schools in the South are 5 percent less likely to attend college. We also find that only 10 percent of the blacks graduating from predominantly white schools are college juniors three years later, compared to 16 percent of the blacks graduating from all-black schools. In the North, we see the opposite: blacks graduating from 90 percent white schools are 7 percent more likely to attend college and 21 percent of the black alumni from predominantly white schools are college juniors three years later, compared to only 11 percent of the alumni of predominantly black schools. This pattern is consistent with the individual-level regression analysis and with an analysis using a variety of other measures of school racial composition and district level of desegregation.

III. SCHOOL RACIAL COMPOSITION AND ACHIEVEMENT TEST SCORES

This section analyzes one of the intervening factors which determines college attendance rate--scores on standard achievement tests. The NLS gathered achievement test data on 69% (1,476) of the blacks and 80% (8,601) of the whites used in our analysis. Six tests were administered. For the purposes of this report an overall achievement test score was constructed by computing the mean of the standard scores for tests of reading, vocabulary, and mathematics.

THE INDIVIDUAL-LEVEL RELATIONSHIP OF RACIAL COMPOSITION TO ACHIEVEMENT

The individual level relationship between school racial composition and achievement test scores, with SES entered as a control in the regression equations, is shown in Tables 9a (for blacks) and 9b (for whites). Since achievement was built by averaging three standard scores, the overall population mean should be 50 and the standard deviation for the total population slightly less than 10. When blacks and whites are separated, the standard deviation should decline further, as it does: the standard deviation for blacks is around 7 with a mean of 42 in the South and 44 in the North; the standard deviation for whites is slightly over 8, with a mean of 51 in the South and 52 in the North. The results shown for blacks in Table 9a are consistent with the Coleman Report. The Coleman analysis showed that the best scaling of family background characteristics produces a standardized regression coefficient of .22 for southern blacks and .23 for northern blacks in the twelfth grade, with teacher, facilities, and student body variables controlled. Our regression coefficient in the North is somewhat higher, but fewer control variables are in the equation.

With SES controlled, we find no relationship between school racial composition and achievement test scores in the South, but in the North blacks in predominantly white schools score higher. The relationship between SES and achievement is stronger for whites than for blacks (which is consistent with the Coleman Report). Racial composition is related to white achievement. In both the North and South, white achieve-

Table 9a

Regression Equations Predicting Black Individual-Level Achievement from Black SES and School Percent White, by Region

	SOUTH				
	$\bar{X}$	σ	r	b	β
Dependent Variables:					
Black Achievement	41.64	6.442	-	-	-
Independent Variables:					
Black SES	2.304	.5915	.225	2.45	.225*
School Percent White	44.03	31.81	.036	.003	.014

r^2 = .051

n = 1283

*p <.05

	NORTH				
	$\bar{X}$	σ	r	b	β
Dependent Variable:					
Black Achievement	43.68	7.094	-	-	-
Independent Variables:					
Black SES	2.547	.5581	.325	3.92	.308*
School Percent White	42.85	33.71	.072	.028	.134*

r^2 = .123

n = 623

p <.05

Table 9b

Regression Equations Predicting White Individual-Level Achievement from White SES and School Percent White by Region

	SOUTH				
	$\bar{X}$	σ	r	b	β
Dependent Variable:					
White Achievement	51.19	8.106	-	-	-
Independent Variables:					
White SES	3.009	.7325	.405	4.46	.403*
School Percent White	80.57	18.40	.059	.019	.043*

r^2 = .166

n = 5105

*p <.05

	NORTH				
	$\bar{X}$	σ	r	b	β
Dependent Variable:					
White Achievement	52.27	8.139	-	-	-
Independent Variables:					
White SES	3.097	.6519	.337	4.19	.336*
School Percent White	91.79	14.03	.053	.022	.038*

r^2 = .115

n = 8473

*p <.05

ment is higher in white schools. The standardized regression coefficient is much smaller for northern whites than for blacks, mainly because there is considerably less variation in the school racial composition for whites. The results for blacks are consistent with both Equality of Educational Opportunity (1965) which found a positive relationship between percentage white and achievement in the Northeast, and Southern Schools (NORC, 1973) which found no relationship in the South.

Table 10 shows the predicted black test scores in all-black and 90 percent white schools, controlling on SES. In the South we see no difference. In the North, the difference between the all-black and predominantly white school is 2.5 standard score points, slightly over one-third of a standard deviation.

THE SCHOOL-LEVEL RELATIONSHIP BETWEEN RACIAL COMPOSITION AND ACHIEVEMENT

The next three analyses are executed at the school level rather than with the individual student as the unit of analysis. The rationale for aggregation of the data is the same as that in the previous section; our concern is with comparing high schools, and we are treating the between high schools variation in mean achievement as an indicator of the quality of education provided by the school.

Tables 11a and 11b show the basic regression equations linking school racial composition to black and white achievement test scores. School mean SES and the natural log of the school district population are used as control variables. In the computation, each school is weighted by the number of black or white students.

Comparing Tables 9a and 9b to 11a and 11b we see that for both races, the aggregate regression coefficients for SES are higher than the individual ones. For example, the unstandardized regression coefficient linking individual SES to northern black achievement is 3.92 while the coefficient linking school mean black SES to northern school mean black

Table 10

Black Individual-Level Achievement Test Scores by High School Percent White and Region, Statistically Controlled for SES

	South		North	
	School Percent White		School Percent White	
	0%	90%	0%	90%
Black Achievement	41.51	41.78	42.48*	45.00*

*$p<.05$

NOTE: Percentages are derived from unstandardized regression coefficients for school percent white shown in table 10a.

Table 11a

Regression Equations Predicting Black School-Level Mean Achievement from School Mean Black SES, School Percent White and School District Size, by Region

	SOUTH				
	$\bar{X}$	σ	r	b	β
Dependent Variable:					
Mean Black Achievement	41.76	3.447	-	-	-
Independent Variables:					
Mean Black SES	2.316	.3609	.462	4.46	.467*
School District Size	9.853	1.583	.190	-.020	-.009
School Percent White	43.36	30.70	.007	.003	.029

r^2 = .214

Weighted n = 1001
Unweighted n = 202
*p <.05

	NORTH				
	$\bar{X}$	σ	r	b	β
Dependent Variable:					
Mean Black Achievement	43.90	4.592	-	-	-
Independent Variables:					
Mean Black SES	2.554	.3558	.387	4.17	.323*
School District Size	11.45	1.726	.126	.625	.235*
School Percent White	39.04	33.92	.266	.041	.302*

r^2 = .235

Weighted n = 475
Unweighted n = 137
*p <.05

Table 11b

Regression Equations Predicting White School-Level Mean Achievement From School Mean White SES, School Percent White and School District Size, by Region

	SOUTH				
	$\bar{X}$	σ	r	b	β
Dependent Variable:					
Mean White Achievement	51.28	3.662	-	-	-
Independent Variables:					
Mean White SES	3.018	.4377	.691	5.92	.707*
School District Size	9.546	1.446	.251	-.127	-.050
School Percent White	81.14	17.92	.129	.020	.100

r^2 = .489

Weighted n = 3186
Unweighted n = 274
*p <.05

	NORTH				
	$\bar{X}$	σ	r	b	β
Dependent Variable:					
Mean White Achievement	52.34	3.276	-	-	-
Independent Variables:					
Mean White SES	3.102	.3520	.606	5.32	.614*
School District Size	9.220	1.615	.030	-.019	-.009
School Percent White	94.24	12.04	.058	-.016	-.057

r^2 = .370

Weighted n = 6914
Unweighted n = 473
*p <.05

achievement is 4.17. The difference is even greater in the South: the individual coefficient is 2.45, the school coefficient 4.46.

In the North, black achievement is noticeably higher in larger school districts, the complaints about the inferiority of big city ghetto schools notwithstanding. There is no relationship between district size and achievement for southern blacks or for whites in either region.

There is a strong positive relationship between the percentage of white students in the school and achievement in the North, and no relationship in the South, just as we saw in Table 9a. The unstandardized coefficient is larger in the aggregate analysis, suggesting that better SES controls and the controls for district size have strengthened the relationship between percentage white and achievement. Since achievement is higher in large cities where schools are more segregated, the addition of this factor in the aggregate analysis tends to separate the positive effect of city size from the negative effect of low white enrollments in large cities.

For comparison we have shown the same equations for white students. The effects of school mean SES are somewhat stronger for whites than for blacks; the unstandardized coefficients are 5.92 (South) and 5.32 (North) compared to 4.46 and 4.17 for blacks. For southern whites, achievement is slightly lower in schools with more blacks; for northern whites, test scores are slightly higher in bi-racial schools. We saw earlier that whites from northern bi-racial schools are more likely to attend college and remain in college than whites in all-white schools, once SES and district size are controlled. The higher achievement of white students in bi-racial schools is consistent with that finding. Comparing the individual and aggregate northern white equations (the bottom panels of Tables 9b and 11b), we see a reversal of sign. At the individual level, percentage white is positively related to achievement; at the aggregate level, the relationship is negative. The main reason seems to be the stronger SES control at the aggregate level. Recall that aggregate SES combines the effects of individual SES on achievement and the contextual effects of the SES of other white students of the same race in the school. White achievement

is higher in bi-racial schools than in all-white schools once city size and the SES of the white students are controlled.

If the effects of school racial composition were the same for whites and blacks, we could argue that school racial composition was related to some general quality of education which affected all students equally. However, this is not the case. In the South, the relationship of percentage white to achievement is positive for whites, zero for blacks; in the North, negative for whites, positive for blacks. Thus a general quality of education factor cannot explain the high performance of black students in predominantly white schools in the North.

Table 12 shows the relationship betwen school percentage white and black achievement in each region, computed by substituting values of 10% and 90% for percent white in the regression equations of Table 11a. All-black and predominantly white schools have the same achievement in the South. In the North, the difference between all-black and 90 percent white schools is 3.69 units, a difference of approximately one-half of a standard deviation. This difference is larger than that shown in the parallel table from the individual-level regression analysis, probably reflecting the better control variables in the aggregate-level equations. If so, the one-half of a standard deviation difference is a more accurate estimate of the difference in achievement between all-black and predominantly white schools.

OTHER MEASURES OF DESEGREGATED SCHOOL EXPERIENCE

A variety of other measures of desegregated school experience was used in addition to school percentage white, with highly consistent results. In the Second Follow-up Questionnaire of the National Longitudinal Study students were asked the racial composition of their elementary school, junior high school, and high school, and also, "Were you ever 'bused' to school for the purpose of racially integrating or racially balancing the student body of the school?" An index of dissimilarity, the index used by Karl and Alma Taeuber (1965) to measure degree of segregation, was computed from DHEW statistics for each

Table 12

Black School-Level Achievement Test Scores by High School Percent White and Region, Statistically Controlled for SES and School District Size

	South		North	
	School Percent White		School Percent White	
	0%	90%	0%	90%
Mean Black Achievement	41.63	41.90	42.30*	45.99*

*p<.05

NOTE: Percentages are derived from unstandardized regression coefficients for school percent white shown in table 12a.

school district. In Tables 13a and 13b we use each of these measures and the district dissimilarity index of segregation in a regression analysis predicting achievement, controlling on SES and school district size.

In the South, only one measure of desegregation is significantly related to achievement, and the non-significant results contradict each other. The higher the percentage of students bused to secondary school and the higher the percentage white of the students' classes in the sixth grade, the higher the achievement. But the dissimilarity index is positively related to achievement, indicating that the more segregated the district, the higher the achievement. In summary, data for the South show no consistent effect.

In the North, five of the measures indicate a positive desegregation effect. The regression coefficients of achievement on the five measures of school percentage white range from +.041 to +.075. The apparent positive impact of attending desegregated schools occurs at all levels, suggesting a long-run cumulative effect. School districts with a low level of segregation, indicated by a low district-level dissimilarity index, have higher black achievement. This correlation is an understatement of the apparent effect of desegregation because it includes the students remaining in black schools in mostly desegregated districts; for the same reason it is not subject to the counter-interpretation that high scores in predominantly white schools are due to the self-selection of the most gifted black students into white schools. The two measures which fail to correlate are the percentage of black students who reported being bused at either the elementary level or the junior high or high school level. However, the percentage of students reporting this is quite small, and it is difficult to know whether to take these results seriously or not.

SUMMARY

We have found that in the North black achievement is higher in predominantly white schools. In the South, achievement is not related to school racial composition. Whites in the North have slightly higher

Table 13a

Regression Equations Predicting Black School-Level Mean Achievement From Mean Black SES, School District Size and Integration Variables, South

	SOUTH				
	$\bar{X}$	σ	r	b	β
Dependent Variable:					
Mean Black Achievement	41.76	3.447	--	--	--
Independent Variables:					
Mean Black SES	2.316	.3609	.462	4.51	.472*
School District Size	9.853	1.584	.190	-.049	-.022
Bused Grades 1-6	2.320	7.010	.021	(.016)	(.033)
Bused Grades 7-12	23.79	27.66	.105	(.022)	(.180)*
Percent White Grade 1	1.885	4.520	.134	(.009)	(.012)
Percent White Grade 6	2.823	7.419	.166	(.029)	(.063)
Percent White Grade 9	11.65	19.32	.124	(.005)	(.026)
Percent White Grade 12	35.97	31.74	-.010	(.000)	(-.002)
School Percent White	43.36	30.70	.007	(.003)	(.029)
District Dissimilarity Index	.4114	.2690	.155	(1.68)	(.131)

r^2 = .213
Weighted n = 1001, unweighted n = 202
* p <.05

NOTE: Percent white by grade means and standard deviations are estimated from the original data. Students were asked to place their class on an eight point scale where 0=0% and 7 = 100% white. Parenthesis represent the Beta if this variable were to be entered in the equation immediately following school district size. The r^2 for the equation was computed using only the dependent variable and the first two independent variables.

Table 13b

Regression Equations Predicting Black School-Level Mean Achievement from Mean Black SES, School District Size and Integration Variables, North

	NORTH				
	$\bar{X}$	σ	r	b	β
Dependent Variable:					
Mean Black Achievement	43.90	4.592	-	-	-
Independent Variables:					
Mean Black SES	2.554	.3558	.387	4.94	.383*
School District Size	11.45	1.726	.126	.293	.110
Bused Grades 1-6	3.940	10.30	.012	(-.010)	(-.023)
Bused Grades 7-12	7.540	18.29	.064	(-.001)	(-.003)
Percent White Grade 1	17.13	22.25	.181	(.048)	(.234)*
Percent White Grade 6	18.49	23.72	.236	(.055)	(.282)*
Percent White Grade 9	27.82	29.01	.391	(.075)	(.476)*
Percent White Grade 12	30.65	31.65	.341	(.057)	(.392)*
School Percent White	39.04	33.92	.266	(.041)	(.302)
District Dissimilarity Index	.5531	.2550	-.055	(-2.02)	(-.112)
r^2 = .162					
Weighted n = 475					
Unweighted n = 137					

*p <.05

NOTE:
Percent white by grade means and standard deviations are estimated from the original data. Students were asked to place their class on an eight point scale where 0 = 0% and 7 = 100% white. Parentheses represent the Beta if this variable were to be entered in the equation immediately following school district size. The r^2 for the equation was computed using only the dependent variable and the first two independent variables.

achievement in bi-racial schools; in the South, white achievement is slightly higher in white schools. In the North, the vast majority of bi-racial schools exist because of neighborhood patterns. This is reflected in the relatively small number of students who report being bused for desegregation purposes. Consequently, these data cannot be used to test hypotheses about the effect of "busing" independent of other kinds of desegregation. Our conclusion is, then, that those black students in the North who happen to live in communities where opportunities to attend schools with whites are greater because of either residential patterns or desegregation activity will have somewhat higher test scores. In the South, the evidence cited here indicates that there is no effect on blacks resulting from attending school with whites.

The failure of desegregation in the South to raise achievement test scores is consistent with the cross-sectional survey reported in Southern Schools. We are inclined to think that the failure of desegregation in the South may be the result of an inhospitable racial climate created by the school staff in many of these schools. An unpublished analysis of the Southern Schools data shows that teacher racial attitudes are linked to student achievement. Gerard and Miller's analysis of the Riverside data (1976) argues for the same conclusion. Lawrence Felice's analysis of data from Waco, Texas (1974) strongly suggests that hostile teachers in previously white receiving schools had a strong negative effect on black student test performance. Data from Southern Schools indicate that southern white teachers reflect the conservative racial attitudes of their region and this hypothesis seems as straightforward as any in explaining the North-South differences.

To turn the question around, why do blacks benefit from attending school with whites in the North? Several hypotheses have been advanced as to why we should expect higher black achievement. One hypothesis is a simple quality of education argument--white schools are superior. A second is a peer group argument--students benefit from attending school with high achieving peers. A third argument is motivational--blacks learn more when they have the opportunity to discover that they can compete successfully with whites. (Since no matter how disparate

mean black and white test scores, the achievement distribution of both races overlaps so that every student, white or black, can see students of the opposite race with higher, lower, or equal performance in school.) These data do not permit us to test these hypotheses. They also do not permit us to determine whether school desegregation has the same effect as desegregation resulting from desegregated housing, or to determine whether one type of desegregation is more effective than another.

IV. SEPARATING COMPONENTS OF THE HIGH SCHOOL ENVIRONMENT WITH PATH ANALYSIS

The next analysis is the most important from a policy perspective. Whether desegregation benefits black students in a particular way is not a policy-relevant question, given that desegregation is a moral and and legal issue. What we can do with these data is attempt to understand the process by which schools of different racial compositions affect students' college plans in order to learn the way in which policy instruments can be developed to intervene in the process.

Table 14 presents correlations between school racial composition, college outcomes and several other school characteristics--the average percentile rank of black students in the school, the mean socioeconomic status and mean achievement test scores of black students, the racial composition of the teaching staff, and finally the size of the school district. Notice that the correlations in the table are primarily positive. In general, schools with high rates of college attendance for black students have high achieving, high socioeconomic status and relatively high percentile ranked blacks. But the correlations between the percentage white of the student body and staff are both negative with college outcomes in the South. In addition, we see that although achievement test scores for blacks are not lower in schools with white students or white staff, black class ranks are lower relative to the other students in the school, and class rank is strongly associated with college outcomes. In general we see a consistent negative picture for blacks in predominantly white schools in the South.

In the North, the pattern is more complex. Student body percentage white is positively associated with college outcomes. It is also positively associated with black achievement, indicating that black students in predominantly white schools have higher test scores. Test scores are in turn associated with college outcomes positively--black students have high test scores in predominantly white schools which helps to explain why they are more likely to attend college and survive in college. At the same time, despite their higher test scores, blacks still have low grades relative to other students in the school; and

Table 14

School-Level Correlations of Black College Attendance, Black College Survival and School Characteristics (South Above Diagonal, North Below)

	College Attendance	College Survival	Class Rank	Mean Black SES	Black Achievement	Staff Percent White	School Percent White	Community Size
College Attendance	-	.429	.210	.351	.375	-.108	-.106	.187
College Survival	.421	-	.200	.323	.344	-.103	-.084	.044
Class Rank	.211	.153	-	.082	.274	-.431	-.464	.298
Mean Black SES	.319	.194	-.154	-	.462	.073	-.055	.398
Black Achievement	.439	.399	.102	.387	-	.005	.007	.156
Staff Percent White	.045	.076	-.415	.141	.306	-	.758	-.264
School Percent White	.124	.164	-.415	.180	.266	.778	-	-.425
Community Size	.053	.012	.220	.126	.080	-.310	-.436	-

weighted n's: South 901,
North 452.
unweighted n's: South 191
North 151

their class rank is also associated with college outcomes. However, we see that school percentage white is only weakly correlated with college attendance and college survival. All of this points to a complex pattern of positive and negative relationships; blacks benefit from attending predominantly white schools in some ways but suffer in others. It is necessary to look carefully at the pattern of direct and indirect connections between school racial composition and college outcomes, and we shall do this using path analysis.

THE PATH ANALYSIS METHOD

Path analysis is a technique designed for interpreting correlational relationships by breaking down effects due to multiple causes into direct and indirect paths. Indirect paths are of two kinds: paths through intervening variables (e.g., high achievement causes high rank in class which causes college attendance) and spurious paths (high achievement is related to college attendance because high socioeconomic status causes both high achievement and college attendance). The correlation coefficient r_{ba} linking a dependent and an independent variable can be expressed as

$$r_{ba} = \text{direct path}_{ba} + \text{indirect path}_{bxa} + \text{indirect path}_{byxa}, \text{ etc.}$$

where ba represents the effect of a on b, bxa the effect a has on b because it affects an intervening variable x or is affected by a prior variable x which in turn affects b, byxa the effect of a on b through the effect x has on y which in turn affects b, etc. The equation contains as many terms as there are logical connections of causes and effect between a and b. The path coefficients are usually written P_{ba}, P_{xa}, etc., but we will use single letters as a shorthand. The magnitude of the indirect path resulting from the two-step causal chain "a causes x" and "x causes b" is equal to the product of the two path coefficients P_{xa} and P_{bx}. The overall magnitude of a three-step chain would be the product of three path coefficients, etc.

This can be summarized by the basic equation of path analysis:

$$r_{ba} = P_{ba} + \Sigma P_{xa}P_{yx}\cdots P_{bz}$$

The overall correlation coefficient between two variables is thus expressed as the sum of the path coefficient from the independent to the dependent variable (the direct path) plus the values representing the magnitudes of the various indirect relationships between the two variables. For each indirect relationship, the value is the product

of all the path coefficients along the route from the independent to the dependent variable. Path analysis, then, is a technique for representing a logical model of the relationship of a series of variables to each other and a device for assessing the relative importance of various linkages shown in that model. The author of path analysis, Sewell Wright (1934), in his first paper on the subject, argues that path analysis is only a method of interpretation of the statistical data as distinguished from statistical procedures which actually compute the relationship between variables. As Duncan (1966) puts it, "Path analysis...(does not)...add anything to conventional regression analysis as applied to a system of equations. But it is invaluable in making explicit the assumptions underlying a system of equations" (p. 7). The path coefficients are identical to standardized regression coefficients generated by various regression equations chosen on the basis of the theoretical model.

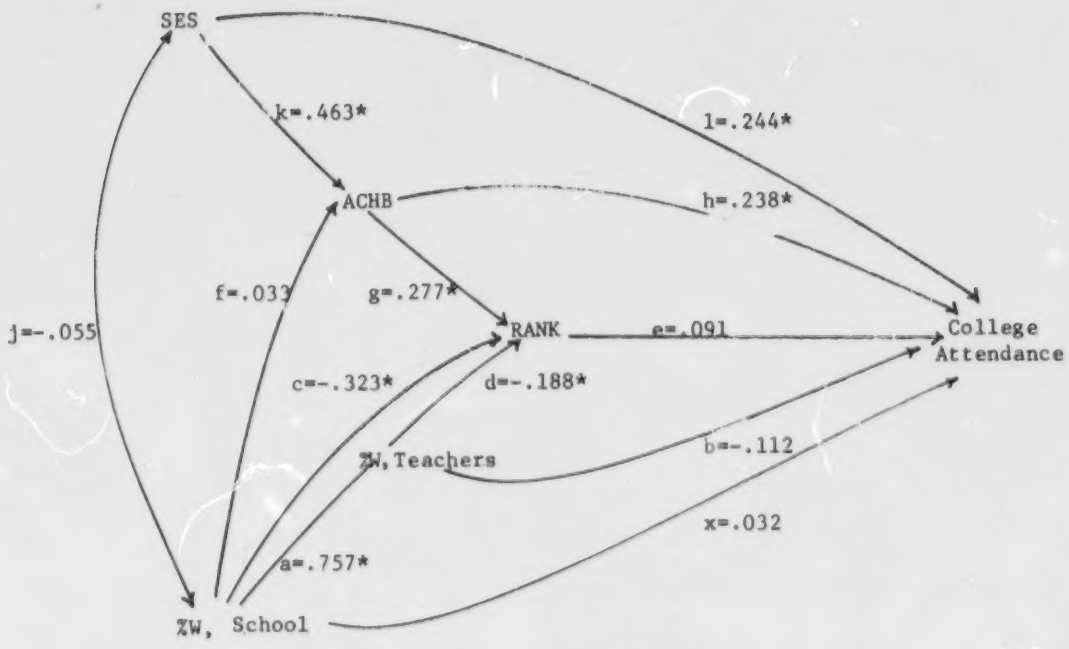
In our case we have assumed a logical model connecting six variables. We assume the racial composition of the school influences the average test scores of black students. We also assume that the assignment of a group of blacks to a school of a particular racial composition determines the number of black and white teachers who will be assigned to that school. We next assume that the number of white teachers and white students in the school and the average achievement test scores of black students combine to help determine the relative percentile class standing of black students. We further assume that the racial composition of the school is a correlate (neither a cause nor an effect) of the mean social class of the black students in the school and that black student socioeconomic status is a factor in determining black students' average test scores and perhaps mean percentile grade standing. Finally we assume that all five of these variables, average black student socioeconomic status, average black student achievement test scores, average black student percentile rank in class, and the proportions of white teachers and white students in the school, contribute in determining the rate at which black students from this school will attend college or survive in college. Having made these assumptions, path analysis can be used to evaluate the

importance of each part of this process. Figures 1-4 give the path models, using correlations and standardized regression coefficients to represent each path; Appendix table 3 shows the corresponding r^2 and unstandardized coefficients.

THE SOUTHERN MODEL

Figure 1 shows the results when our model is applied to black college attendance rates from southern high schools. Only one plausible path has been omitted: the direct link between average black social status and average class rank, which was very close to zero.* Socioeconomic status does have an impact upon class rank but only because schools whose black students have higher socioeconomic status have higher black achievement test scores which in turn means that black grades will be higher relative to the white students in the school. Examining Figure 1 we see that the strongest path coefficients link average black student socioeconomic status to average black student achievement and the proportion of white students in the school to the proportion of white teachers in the school. We also find that schools with higher average black socioeconomic status send more students to college, as do schools with higher average black achievement test scores. Finally, we see that the higher the average test score performance of the black students in the school the higher their average percentile rank. But while individual black students often score quite high on achievement tests, in the vast majority of cases the average performance of all black students in a high school is noticeably below that of white students. Apparently this is also the case for performance on class work and tests administered by individual teachers, for we find that the more white students there are in the school the lower the average rank of the black students. In an all-black school a representative sample of black students would have an average percentile rank of .50. However, in schools which are 25 percent black and 75 percent white, the average class rank of the black students is only at the 40th percentile. We also see that controlling on percentage white students and black achievement, the more white teachers in the school, the lower the average black class rank. Perhaps black students do better at school work when the school has more black teachers, but we think it more likely that there is a grading

*The only other paths which are near zero are those stemming from school racial composition, but since this is the key variable in the analysis, we elected to retain these paths.



Unweighted n = 191

Paths From School Percentage White
To College Attendance

Direct (x)	.032
White Teacher (ab)	-.085
Class Rank (ce + ade)	-.042
Achievement (fge + fh)	.009
SES (jl + jkge + jkh)	-.020
Total = r(% white school x college attendance)	-.106

* $p < .05$

Figure 1: School-level Path Analysis of the Relationship of School Percentage White to Black College Attendance, Sou

bias,* withwhite teachers grading black students harder than do black teachers.

When we look at the predictors of college attendance rates for black students, in addition to the positive effects of average socioeconomic status and average achievement test scores, we find a positive impact of average rank in class. (No doubt this reflects the impact of grades on both the studen: and counselor perception of his ability to do college work and college admission standards.) We also see a negative link between the number of white teachers in the school and college attendance. Although neither coefficient is significant in the southern data, both are significant when both regions are pooled. Apparently the presence of white teachers in some way inhibits black college attendance, independent of the impact of white teachers on student grades. Finally we see no direct link between the number of white students in the school and college attendance once the number of white teachers, average class rank, achievement and socioeconomic status have been entered in the equation.

The model shown in Figure 1 contains one direct and eight indirect links between the racial composition of the student body and the college attendance rates of black students. These are summarized in the calculations in the lower portion of the figure. The direct link, path x, is not statistically significant. The impact of school percentage white on black college attendance rates which occurs indirectly through the presence of more white teachers (the product of path coefficients a and b: .757 x (-.112) = -.085) is a strong negative factor. We also see a negative link between number of white students and college attendance rates as a result of the lower black class rank in predominantly white schools. This indirect path takes two forms--the two-step path from percentage of white students to class rank and to college attendance and the three-step path linking number of white students to number of white teachers to class rank to college attendance. The other paths are of little importance. The two indirect paths through achievement have a trivial impact since percentage white is weakly related to achievement. Similarly since there is only a very slight relationship between school racial composition and black student SES (the data show

*Bias is used in its technical, rather its pejorative every-day usage; we do not know (nor could we know) whether black students are being unfairly graded down by white teachers or unfairly graded up by black teachers.

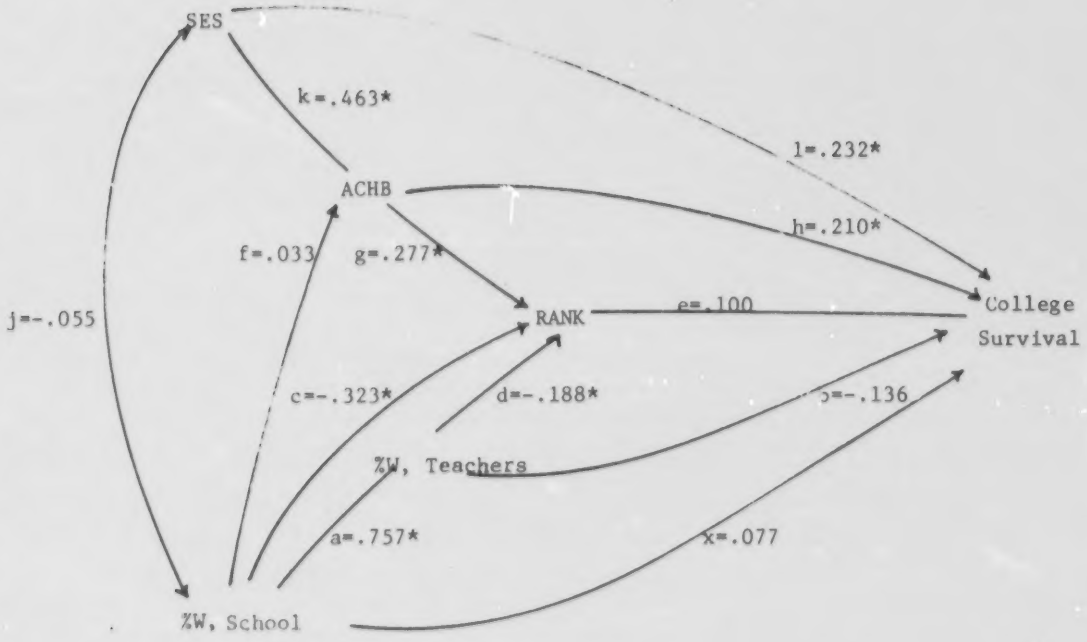
that blacks in predominantly white schools have slightly lower socio-economic status than those in predominantly black schools) the three paths through socioeconomic status are also unimportant.

The result is that the negative correlation between percentage white of the school and the rate of black student college attendance is explained by two major indirect paths: blacks in white schools are less likely to attend college because they have white teachers and they are less likely to attend college because their grade standing is low. The finding that white teachers inhibit black college attendance is consistent with Narot's analysis in Southern Schools (NORC 1973) which showed that staff racial attitudes were correlated with both the morale and the achievement test scores of black students.

Figure 2 shows the relationship of school racial composition to southern black college survival. The path coefficients on the left side of the model are identical (as they must be) to those used in Figure 1. We see that socioeconomic status and achievement are important predictors of college survival. Students able to perform well on standardized tests are more likely to go to four-year colleges and to not drop out, and a higher family SES (or the greater motivation of a middle class family) may be necessary to prevent students from quitting school before the junior year for financial reasons.

It is not so obvious why class rank and the number of white teachers in high school should be important predictors. We contend that there are two logical interpretations. First, it may be that success in college is dependent upon a successful foundation of achievement in high school. Students who did poorly in southern high schools or suffered the discomforts of having large numbers of white teachers may have an inadequate psychological foundation to endure the stress of college. However, we believe that a second interpretation is more to the point: the presence of more white teachers and a relatively low class standing result in students being counseled into the kinds of colleges where they are less likely to remain in school--perhaps junior colleges or four year schools characterized by very high black student drop out rates. This hypothesis will be tested in Section V.

One might argue that the most critical datum is the direct path



Unweighted n = 191

Paths From School Percentage White To College Survival	
Direct (x)	.077
White Teacher (ab)	-.103
Class Rank (ce + ade)	-.047
Achievement (fge +fh)	.008
SES (jl + jkge + jkh)	-.019
Total = r(%white school x college survival)	-.084

* $p < .05$

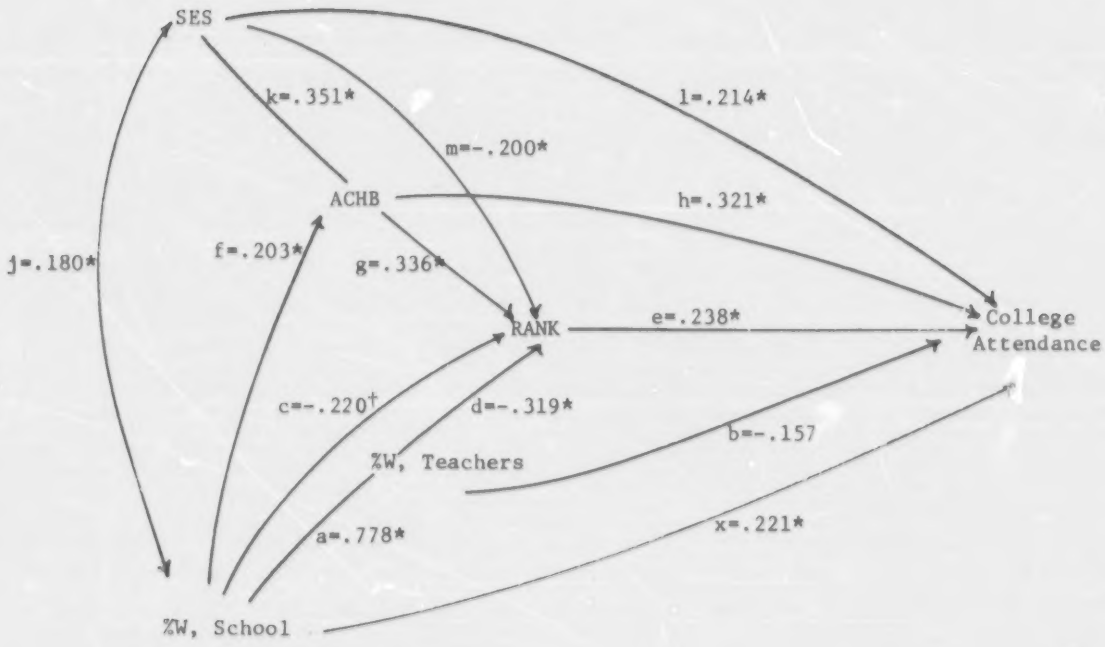
Figure 2: School-level Path Analysis of the Relationship of School Percentage White to Black College Survival, South

between the number of whites in the school and college survival. Although it would be possible to develop policy instruments to minimize the impact of grade ranking or to eliminate the unfortunate effects of having white teachers, little can be done to control the remaining direct effect of the presence of white students. However, our analysis is reassuring on this point. In the case of college attendance there was no direct connection between the number of whites in the school and the number of blacks going on to college. In the case of college survival there is a non-significant positive link.

THE NORTHERN MODEL

Figure 3 shows the path model of the impact of school racial composition on college attendance for northern high schools. Comparing it to the South (Figure 1) we see some similarities and several important differences. The general impact of socioeconomic status and achievement is similar* in both regions, but achievement and SES are positively correlated with the percentage of white students in the North. Consequently both factors become important in the northern path analysis. We assume that SES correlates with percentage white in the North because desegregation there is more often the result of neighborhood patterns and voluntary desegregation plans which permit high-status blacks to enter integrated schools, as opposed to the compulsory plans of the South. Independent of the effect of SES, there is a positive link between the percentage of white students and black achievement. As one might expect, there are positive links between socioeconomic status and achievement and between the average school achievement and the average black class rank. There is a peculiar negative link between socioeconomic status and class rank suggesting that once we control on achievement test scores, schools with middle-class black populations are more likely to have lower average class ranking for blacks. In a separate path analysis (not shown) we found that the major explanation is that middle-class black students are likely to be in schools with middle-class whites whose achievement test scores are higher and whose class performance

*The reader must examine the unstandardized coefficients, Appendix Table 3, to verify this.



Unweighted n = 151

Paths From School Percentage White
To College Attendance

Direct (x)	.221
White Teacher (ab)	-.122
Class Rank (ce + ade)	-.111
Achievement (fge + fh)	.081
SES (jl + jme +jkge + jkh)	.055
Total = r(%white school x college attendance)	.124

* $p < .05$

† $p < .05$, one-tail test

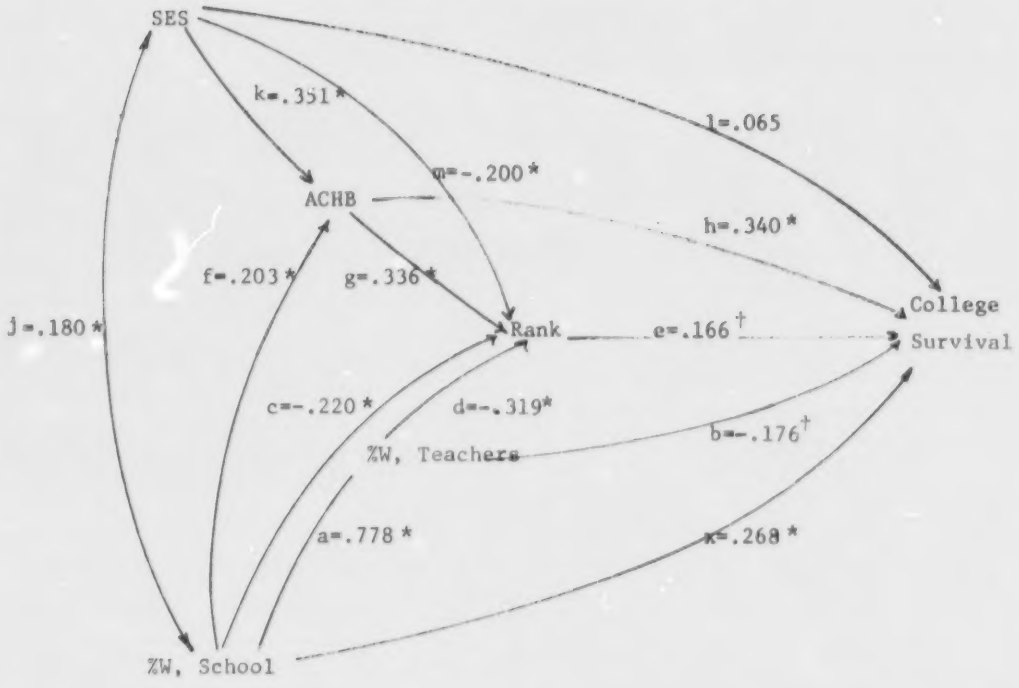
Figure 3: School-level Path Analysis of the Relationship of School Percentage White to Black College Attendance, North

is apparently better, since the higher the socioeconomic status of white students, the lower the average class ranking of blacks.

In the North, as in the South, strong paths emerge connecting the percentage of white students to the percentage of white teachers in the school and to black class rank. The remaining four paths, however, look quite different. First, we see that the direct link between the number of white teachers and low class rank for blacks is much stronger in the North. The linkage between the number of white teachers and the percentage of blacks going on to college is also stronger in the North. One might expect greater racial polarization in the South, but this leads us to conclude that black teachers may be as important in the North as in the South. We also see that relative class standing is a more important predictor of college attendance in the North than it was in the South. Finally, we see a strong direct link between percentage of white students and the rate at which blacks go on to college.

The path analysis is summarized in the five coefficients shown in the lower part of Figure 3. The summary statistics indicate that racial composition is related to college attendance for blacks in 3 ways: it is partly a spurious relationship, partly a positive relationship, and partly a negative one. The relationship is partly spurious because the black students in predominantly white schools are of higher socioeconomic status indicated by the positive indirect path associated with SES. There is a positive linkage because black students in predominantly white schools show higher achievement test score performance and because attending school with whites has a positive direct effect. Finally there are two strong indirect negative effects: black students in white schools have lower grades and white teachers are less likely to encourage black students to go to college.

The final path representation, Figure 4, shows the relationship of high school racial composition to black college survival. The most interesting difference between Figures 3 and 4 is that family socioeconomic status does little to successfully predict college survival. Apparently there are sufficient scholarship programs and opportunities to attend commuter colleges to prevent income from being an important



Unweighted n = 151

Paths From School Percentage White

To College Survival

Direct (x)	.268
White Teacher (ab)	-.137
Class Rank (ce + ade)	-.077
Achievement (fge + fh)	.080
SES (jl + jme + jkge+jkh)	.030
Total = r(% white school x college survival)	.164

* $p < .05$

† $p < .05$, one-tailed test

Figure 4: School-level Path Analysis of the Relationship of School Percentage White to Black College Survival, North

factor. As might be expected, achievement test scores remain an important predictor of college survival. It is not so obvious why the percentage of white teachers in high school should be important factors in the North, just as they are in the South. We noted earlier that there were two possible explanations--either successful college attendance requires a foundation of success in high school which high grades and black teachers provide for black students or, alternately, the combination of white teachers and relatively low grades tends to push black students into junior colleges or four-year schools with high drop out rates. This issue will be addressed in the next section. Finally, we see a strong direct path between the number of white students in the school and college survival.

The results are summarized in the five coefficients at the bottom of the figure. The direct effect indicates that, all else being equal, attending school with whites is helpful to college survival. We therefore conclude that attending school with whites tends to provide black students with a social or educational experience which facilitates success in college. Attending school with whites increases achievement test scores which is reflected in higher rates of survival. Since socioeconomic status is not strongly related to college survival, SES has dropped out of the relationship. These various positive effects of desegregation are offset partly by the two relatively strong negative paths. Attending a predominantly white school is beneficial; it would be more beneficial were it not for the presence of white teachers and the lower relative grades that blacks earn in white high schools.

SUMMARY

In our attempt to explain the low attendance and survival rates of southern blacks from white high schools two interrelated factors emerge offering an unpleasant but convincing explanation. We found that controlling on staff percentage white and class rank explains the negative effect of school (student body) percentage white. Viewed from this perspective it would appear that race of teachers, not students, are a significant part of the college attendance and survival

problem in the South. What is it exactly that teachers do that has such an impact on southern black college outcomes?

First, as the path analysis in this section has indicated, southern teachers in predominantly white schools grade their black students relative to white student performance. It comes as no surprise that black students suffer in the comparison. We noted also that white teachers have an additional negative impact on black college attendance which operates independent of their grading practices. There are several possible explanations, and the data do not permit us choose among them, but we suspect that many teachers, both white and black, bias their behavior to favor students of their race. Second, and closely related to our first factor, we observed that while black achievement is as high in predominantly white schools as in predominantly black schools, class rank is lower. Low grades significantly lessen the black student's chances of college admission. When the absence of black teachers discourages black students from further education, the picture becomes bleak indeed. We hypothesize that those black students who do manage to get into college despite poor grades and lack of encouragement may not be going to the kinds of colleges where survival is likely. Perhaps the only colleges available to these students are two-year schools or schools with a high attrition rate. This is a question we will attempt to address in the next section.

The black college outcomes picture in the North is plagued by some of the same problems, but there are important differences. Northern teachers in predominantly white schools also grade "on the curve," and again race of teachers affects student grades. Here, as in the South, this results in lower grades for blacks in white schools, a factor which inhibits college attendance and survival. In the North black class ranks are also lower. However, offsetting the negative effects of poor grades and low class standing are the large direct positive links between school percentage white and both college outcomes (Figures 3 and 4). The likelihood of college attendance and survival is further increased by the higher achievement test performance of northern blacks in predominantly white schools.

This analysis has identified some serious, but correctable

problems with desegregated schools. One problem is the racial segregation of teaching staffs--the black student who moves from a black school to a white school leaves his supportive black teacher behind. Another problem is that he will be graded "on the curve," and his lower class rank in the white school will count against him. On either account, the black student in a predominantly white school is being punished for participating in a desegregated experience. In the North, this punishment is more than offset by other benefits of attending a predominantly white school; but in the South, the predominantly white school has no redeeming features.

V. HIGH SCHOOL CHARACTERISTICS INFLUENCING BLACK COLLEGE ATTENDANCE AND SURVIVAL

We have seen that one characteristic of the high school--its racial composition--affects black college outcomes. Assuming that the racial composition of a school cannot be easily manipulated for policy purposes, this section attempts to address the following broad question: are there additional school characteristics which might positively affect college attendance and survival rates in the South and increase the rates in the North? In the analyses we will limit ourselves to five dependent variables:

(1) college attendance
(2) college survival
(3) whether the respondent's first college after high school was a two year or a four year school
(4) whether the respondent's first college after high school was a predominantly white (i.e., not defined as historically black) or a predominantly black school
(5) whether the respondent received scholarship assistance in the first year of college

College attendance, college survival and scholarship assistance were determined from the First and Second Follow-Up Questionnaires of the National Longitudinal Study. Data on the colleges attended by NLS respondents were furnished by Alan Wagner and Lawrence Tenison of the College Entrance Examination Board, who merged data from existing archives of college characteristics with the National Longitudinal Study data. Wagner and Tenison located published data for 91 percent of the schools named as attended in October 1973, and 84 percent of the October 1972 schools which were identified by respondents who either changed schools between 1972 and 1973 or dropped out of school during 1973. However, this overestimates the response rate, since 5 percent of the college students did not provide codeable school names and many others either did not complete the questionnaire or this portion of it. Using both the First and Second Follow-Up Questionnaires, we have identified

1,488 black students (out of 2,901) who attended college at some time in 1972, 1973 or 1974. Of these, we have Wagner-Tenison data on 1,074 (77 percent). We have first follow-up survey data on scholarships for 1,128 (76 percent), and both scholarship and Wagner-Tenison data for 846, or 57 percent, of the known college attendees. Of these 846, 625 are enrolled in white colleges and 219 in black colleges. Thus the sample sizes in this section will range from 2,901 (for college attendance and college survival rates) to 1,074 (for race of college attended) to 625 (for scholarship holding among students enrolled in white colleges). These data were *not* aggregated to the school level, so the analyses which follow will all be done at the individual level.

The five independent variables are:

(1) high school percentage white

(2) presence of an Upward Bound program in respondent's high school

(3) class rank

(4) number of black counselors in respondent's high school

(5) number of students per counselor-hour

School percentage white and Upward Bound were taken from the National Longitudinal Study School Questionnaire. Class rank was taken from the Student's Record Information form. The remaining independent variables were taken from the Counselor Questionnaire.

Finally, we will use two control variables:

(1) black student socioeconomic status

(2) black achievement test performance

Respectively, the control variables were taken from the Baseline Survey and the NLS tests administered to each student.

We will continue to analyze the data by region for two reasons. First, as Table 15 indicates, when compared with southern blacks, northern blacks are less likely to attend four year colleges. This is due, at least partially, to the proliferation of junior colleges and commuter colleges in northern urban areas. In addition, Table 16 shows that only 7 percent of northern blacks enter black colleges. In the South, the percentage is more than five times larger, a reasonable difference given the tradition of black colleges in that region.

Table 15

Individual-Level Percentages of Blacks Entering Two-Year and Four-Year Colleges, by Region

	South	North
Two Year College	29%	40%
Four Year College	71	60
	100%	100%
n	(598)	(476)

Source: Two-year colleges and four-year colleges are identified as such from the Higher Education Directory

Table 16

Individual-Level Percentages of Blacks Entering Black and White Colleges, by Region

	South	North
Percent Entering Black Colleges	38%	7%
Percent Entering White Colleges	62	93
	100%	100%
a	(598)	(476)

FACTORS CONTRIBUTING TO LOW COLLEGE ATTENDANCE AND SURVIVAL RATES

Institutional Characteristics

In our preliminary examination of college characteristics we find that whether an institution is two year or four year has a direct bearing on college survival rates. Table 17 shows, for example, that regardless of region or predominant race of college, students entering four year schools have a much greater likelihood of reaching the junior year. In the North, only 10 percent of the black students entering two year colleges were juniors three years later, compared to 38 percent of those entering four year white schools. Of the small number of northern blacks who attended predominantly black schools, about half were still in college three years later. In the South, the survival rates are somewhat higher in predominantly white four year colleges than in black four year schools but are again very low for students attending junior colleges. In summary, we have shown that attendance at a two year college translates to poor survival rates. The question now becomes: are there high school characteristics which influence the extent to which black students enroll in two year or four year institutions following high school graduation? We will return to this issue shortly.

Scholarship Assistance

Both black and white NLS respondents give finances rather than academics as the primary reason for dropping out of college. Scholarship assistance thus seems to hold promise as a method of boosting college survival rates, and it is true that for black graduates of northern high schools, the zero-order correlation between holding a scholarship freshman year and college survival is .30. In the South, the zero-order relationship is .24. This does not prove a causal relationship, of course, and we will not undertake a detailed analysis of this question. We are encouraged by the larger number of black respondents who hold scholarships during their first year of college. As Table 18 shows, southern black students attending black colleges have a considerable advantage here--49 percent hold scholarships in their freshman year, a rate roughly equivalent to that of northern

Table 17

Individual-Level Black College Survival Rates by Initial Entry into Two Year and Four Year Colleges, by Predominant Race of College and Region*

	South				North			
	Black College		White College		Black College		White College	
	2 Year	4 Year	2 Year	4 Year	2 Year	4 Year	2 Year	4 Year
Percent Surviving in College	9%	39%	12%	49%	-	52%	10%	38%
n	(11)	(218)	(166)	(203)	(1)	(33)	(192)	(250)

*The category "Two Year" includes proprietary institutions

Table 18

Individual-Level Percentages of Blacks Receiving Scholarship Assistance in First Year, by Predominant Race of College and Region

	South		North	
	Black College	White College	Black College	White College
Percent on Scholarship, First Year	49%	36%	37%	52%
n	(194)	(287)	(27)	(338)

blacks attending white colleges. The small number of northerners who attend black schools have fewer scholarships. If this result is not due to sampling error, it probably reflects the fact that these northerners have higher socioeconomic status than most southern blacks and, indeed, than the northern blacks who enrolled in white colleges. This is understandable given that a large fraction of the northern blacks attending black colleges would have to travel a considerable distance to the school.

If we assume that scholarship assistance is beneficial, the next logical question is: what can high schools do to increase the likelihood of scholarship assistance? We have found one fairly strong correlate of first year scholarship assistance--the presence of an Upward Bound program at the high school level--but unfortunately its utility seems to be limited to the North.

Originally under the auspices of the Office of Economic Opportunity (OEO), the Upward Bound program now operates under the Division of Student Special Services of the Office of Education (OE). In 1971, nearly 300 institutions and over 24,000 pupils participated in the program. Former Upward Bound members, neighborhood groups and clergy work with Upward Bound programs in an attempt to recruit for college attendance those students who would not normally be reached by traditional recruitment or counseling practices. Program guidelines specify that to be eligible, students must come from families whose annual incomes are below poverty level. Program staff are expected to help students obtain admission to college and, once they are admitted, to assist them in locating possible sources of financial aid. Using data collected by OEO, the Office of Education found that of the approximately 64,000 students participating in the program between 1965 and 1969, 66.5 percent enrolled in a two or four year institution. The survival rate of those entering college does not seem to be positively influenced by the program, however, but hovers instead around 50 percent, roughly the national average (Shea, 1967; Froomkin, 1968; Gardenhire, 1968; Kornegay, 1968).

Table 19 presents the regression equations predicting first year scholarship assistance for black students in white colleges from high

Table 19

For Blacks in White Colleges, Regression Equations Predicting Black Individual-Level Scholarship Assistance in First Year of College from School Percent White, High School Achievement, Black Student SES and Presence of Upward Bound Program in High School, by Region

	SOUTH				
	$\bar{X}$	σ	r	b	β
Dependent Variable:					
Scholarship, First Year	35.89	48.05	-	-	-
Independent Variables:					
School Percent White	44.03	31.80	.049	.071	.047
Black Achievement	41.64	6.442	.078	.962	.129*
Black SES	2.304	.5915	-.199	-18.5	-.228*
Upward Bound Program	47.52	49.95	-.074	(-.044)	(-.046)

$r^2 = .058$

$n = 287$

*$p < .05$

	NORTH				
	$\bar{X}$	σ	r	b	β
Dependent Variable:					
Scholarship, First Year	52.07	50.03	-	-	-
Independent Variables:					
School Percent White	57.15	33.71	.094	.150	.101*
Black Achievement	43.68	7.094	.274	2.51	.356*
Black SES	2.547	.5581	-.129	-22.0	-.245*
Upward Bound Program	63.91	48.05	.067	.133	.128

$r^2 = .147$

$n = 338$

NOTE: Parentheses indicate the Beta if this variable were to be entered in the equation next. This variable was not used in computing the r^2 for the equation.

school percentage white, black achievement and SES, and the presence of an Upward Bound program in the high school. We find that when percentage white, achievement and SES are held constant, northern blacks in white colleges have a 13.3 percent higher scholarship rate if their high schools had Upward Bound programs. While not statistically significant, such an increase is not trivial, particularly when we observe that these data refer only to the presence of such a program, not to actual participation. No such pattern is discernible in the South. It is reassuring to note that in both regions SES enters the equation negatively--controlling on ability measures, financial aid is going to low-income students. As might be expected, achievement correlates positively with first year scholarship assistance in both the North and the South. School percentage white exerts a mildly beneficial but not statistically significant effect in the South. The percentage white effect is twice as strong in the North, but continues to fall short of statistical significance.

The Significance of Class Rank and Achievement

We noted earlier that black students in predominantly white high schools tend to have lower grade point averages than blacks in predominantly black schools. We have already seen that students with lower class standings are less likely to attend college even when their achievement test performance is controlled. In addition, Table 20a indicates that for black students attending white colleges, low class rank and poor achievement are strongly associated with attendance at a two year rather than a four year institution. Attending a two year college, as we already know, dramatically lowers one's survival rate. The two relationships (class rank with four year college and achievement with four year college) are statistically significant for both regions.

Table 20b illustrates the impact of class rank and high school achievement test performance on first year scholarship assistance for students attending white colleges. The table presents the regression equations used to

Table 20a
For Black Students Attending White Colleges, Regression Equations Predicting Individual-Level Attendance at a Four-Year College From High School Percent White, High School Achievement, High School Class Rank and Black Student SES, by Region

	SOUTH				
	$\bar{X}$	σ	r	b	β
Dependent Variable:					
Four-Year College	.5501	49.8[illegible]	-	-	-
Independent Variables:					
School Percent White	44.03	31.80	-.046	-.011	-.007*
Achievement	41.64	6.442	.392	2.27	.293*
Black SES	2.304	.5915	.175	8.34	.099*
Class Rank	45.15	27.32	.309	.288	.158*

r^2 = .181

n = 369

*p <.05

	NORTH				
	$\bar{X}$	σ	r	b	β
Dependent Variable:					
Four-Year College	56.56	49.62	-	-	-
Independent Variables:					
School Percent White	42.85	33.71	.041	.096	.065*
Achievement	43.68	7.094	.350	1.87	.267*
Black SES	2.547	.5581	.092	.000	.000*
Class Rank	46.02	26.70	.303	.453	.244*

r^2 = .170

n = 442

*p <.05

Table 20b

For Black Students Attending White Colleges, Regression Equations Predicting Individual-Level Scholarship Assistance in First Year From High School Percent White, High School Achievement, High School Class Rank, and Black Student SES by Region

	SOUTH				
	$\bar{X}$	σ	r	b	β
Dependent Variable:					
Scholarship, First Year	35.89	48.05	-	-	-
Independent Variables:					
School Percent White	44.03	31.80	.049	.199	.132
Achievement	41.64	6.442	.078	-.186	-.025
Black SES	2.304	.5915	-.199	-17.2	-.212*
Class Rank	45.15	27.32	.247	.542	.308*

r^2 = .123

n = 287

*p <.05

	NORTH				
	$\bar{X}$	σ	r	b	β
Dependent Variable:					
Scholarship, First Year	52.07	50.03	-	-	-
Independent Variables:					
School Percent White	42.85	33.71	.094	.214	.144*
Achievement	43.68	7.094	.274	1.81	.256*
Black SES	2.547	.5581	-.129	-20.3	-.227*
Class Rank	46.02	26.70	.266	.431	.230*

r^2 = .174

n = 338

*p <.05

predict first year scholarship holding for black students in white colleges from high school percentage white, black achievement and SES, and class rank. Again we find that low class rank and poor achievement have a strong negative effect on our dependent variable. The chances of holding a first year scholarship are severely reduced when high school achievement (in the North) or class rank (in either region) is low. The relationship between class rank and holding a scholarship is statistically significant for both regions. The relationship between achievement and scholarship, however, is significant in the North only.

The reader should observe that attending a white high school increases the chances of receiving scholarship aid slightly, which helps to explain why college survival rates are higher for blacks from white schools. However black seniors from white high schools are not more likely to attend four-year colleges.

It is widely recognized that high school grades are an important predictor of college performance. However, it is this very reliance upon grades which seems to explain why black students from predominantly white schools do not have more of an advantage over blacks who attend predominantly black schools. A lower relative class standing for blacks in white schools operates directly to reduce their chances of attending and surviving in college. Class rank also effects black college outcomes indirectly. Poor grades mean two year colleges and no scholarships. Obviously, to boost black college attendance and survival rates we have to find a way around the problem of class rank. Our next independent variable, number of black counselors in the high school, offers important insights in this area.

COUNSELING AS A WAY TO INFLUENCE COLLEGE ATTENDANCE AND SURVIVAL RATES

The Role of Black Counselors

We constructed a measure of the ethnicity of the counseling staff. The measure is zero if neither counselor was black, one if one was

black and two if both were black. We used this variable to further divide the regional samples into schools with and without black counselors. We then computed a series of regression equations using achievement test performance, socioeconomic status and class rank to predict college attendance, college survival and first year scholarship assistance. Tables 21a-c present these equations separately by region and presence of black counselors. In every case, class rank is a more important predictor of our three outcomes in schools with white counselors than it is in schools with black counselors. In four of the six cases achievement test performance is also more important. (The exceptions are northern college attendance and southern scholarship assistance.) If we make the obvious assumptions that counselors influence student decisions on college attendance (as has been shown by Rehberg and Hotchkiss [1972]) and also influence the type of college attended and the level of financial aid requested, then these data indicate that white counselors are more influenced by both class rank and achievement test scores than are black counselors. This difference between white and black counselors is especially strong in the North. Specifically, Table 21a shows that once achievement test performance and SES are controlled, class rank enters the southern college attendance equation with an unstandardized coefficient of .350 when no black counselors are present. When there is at least one black counselor in the high school, the coefficient drops to .290. In the North, the gap is even more pronounced. When there are no black counselors, class rank has an unstandardized coefficient of .315. The addition of a black counselor reduces the relationship to b = .089. A similar pattern for college survival can be observed in the North in Table 21b. Once achievement and SES are held constant, the relationship of class rank to northern survival rates drops from a coefficient of .272 when no black counselors are present to b = .100 when there is at least one black counselor. The southern results show no pattern. We know that first year scholarship assistance increases the likelihood of college survival. Table 21c indicates that for black students entering white colleges, black counselors in both regions pay less attention to class rank in terms

Table 21a

Regression Equations Predicting Black Individual-Level College Attendance from Black Achievement, Black SES and Class Rank, by Number of Black Counselors and Region

SOUTH

	0 Black Counselors					1-2 Black Counselors				
	$\bar{X}$	σ	r	b	β	$\bar{X}$	σ	r	b	β
Dependent Variable:										
College Attendance	49.92	49.53	-	-	-	51.09	50.01	-	-	-
Independent Variables:										
Black Achievement	41.21	6.251	.337	1.66	.210*	42.03	6.593	.239	.903	.119*
Black SES	2.245	.5621	.204	13.7	.156*	2.339	.6056	.238	16.6	.201*
Class Rank	41.03	26.74	.306	.350	.189*	49.33	27.28	.220	.290	.158*
r^2					.160					.111
(n)	(546)					(539)				

*p <.05

NORTH

	0 Black Counselors					1-2 Black Counselors				
	$\bar{X}$	σ	r	b	β	$\bar{X}$	σ	r	b	β
Dependent Variable:										
College Attendance	58.42	49.34	-	-	-	54.41	49.84	-	-	-
Independent Variables:										
Black Achievement	44.02	7.341	.296	1.42	.211*	43.18	6.697	.283	1.70	.228*
Black SES	2.548	.5745	.185	9.62	.112*	2.546	.5457	.192	11.4	.125
Class Rank	43.19	26.59	.228	.315	.170*	50.00	26.40	.124	.089	.047
r^2					.122					.094
(n)	(371)					(252)				

*p <.05

Table 21b

Regression Equations Predicting Black Individual-Level College Survival from Black Achievement, Black SES and Class Rank, by Number of Black Counselors and Region

SOUTH

	0 Black Counselors					1-2 Black Counselors				
	$\bar{X}$	σ	r	b	β	$\bar{X}$	σ	r	b	β
Dependent Variable:										
College Survival	9.640	29.53	-	-	-	14.06	34.78	-	-	-
Independent Variables:										
Black Achievement	41.21	6.251	.351	.983	.208*	42.03	6.593	.323	.955	.181*
Black SES	2.245	.5621	.128	4.05	.077*	2.339	.6056	.219	9.30	.162*
Class Rank	41.03	26.74	.360	.272	.247*	49.33	27.28	.318	.293	.230*
r^2					.172					.167
(n)	(546)					(539)				

*$p < .05$

NORTH

	0 Black Counselors					1-2 Black Counselors				
	$\bar{X}$	σ	r	b	β	$\bar{X}$	σ	r	b	β
Dependent Variable:										
College Survival	16.63	37.28	-	-	-	10.91	31.21	-	-	-
Independent Variables:										
Black Achievement	44.02	7.341	.415	1.60	.316*	48.18	6.697	.191	.648	.139
Black SES	2.548	.5745	.245	8.70	.134*	2.546	.5457	.115	4.35	.076
Class Rank	43.19	26.59	.280	.272	.194*	50.00	26.40	.132	.100	.085
r^2					.218					.046
(n)	(371)					(252)				

*$p < .05$

Table 21c

For Black Students in White Colleges, Regression Equations Predicting Black Individual-Level Scholarship Assistance in First Year from Black Achievement, Black SES and Class Rank, by Number of Black Counselors and Region

SOUTH

	0 Black Counselors					1-2 Black Counselors				
	$\bar{X}$	σ	r	b	β	$\bar{X}$	σ	r	b	β
Dependent Variable:										
Scholarship, First Year	32.76	47.14	-	-	-	38.01	48.68	-	-	-
Independent Variables:										
Black Achievement	41.21	6.251	-.006	-.701	-.093	42.03	6.593	.179	.945	.128
Black SES	2.245	.5621	-.332	-27.6	-.329*	2.339	.6056	-.136	-14.4	-.179
Class Rank	41.03	26.74	.218	.501	.284*	49.33	27.28	.266	.389	.218
r^2					.172					.105
(n)	(116)					(171)				

*p < .05

NORTH

	0 Black Counselors					1-2 Black Counselors				
	$\bar{X}$	σ	r	b	β	$\bar{X}$	σ	r	b	β
Dependent Variable										
Scholarship, First Year	51.61	50.14	-	-	-	52.46	50.08	-	-	-
Independent Variables:										
Black Achievement	44.02	7.341	.313	2.18	.319*	48.18	6.697	.244	1.85	.247*
Black SES	2.548	.5745	-.070	-15.7	-.180*	2.546	.5457	-.184	-23.3	-.254*
Class Rank	43.19	26.52	.294	.390	.207*	50.00	26.40	.219	.235	.124
r^2					.173					.127
(n)	(155)					(183)				

*p <.05

of scholarship assistance. We also find that low SES is of primary importance to northern black counselors but least important to northern white counselors. In the South, white counselors seem to use low SES as a major criterion for scholarships, an encouraging sign.

Our discussion thus far has shown that black counselors consider class rank to be less crucial as a predictor of college potential. They also give less weight to class rank when it comes to scholarship counseling. Black counselors thus seem to follow Washington's (1968) recommendation that one search for subtle indications of academic talent.

Black counselors may also be more aggressive in locating financial aid for black students. Table 22a uses the number of black counselors as an independent variable to predict first year scholarship assistance for students in white colleges. Controlling on high school percentage white and black achievement and SES, we find a slight positive, but not statistically significant, association ($\beta = .084$) between southern black counselors and first year scholarship assistance. The same pattern holds in the North. While the northern standardized coefficient is larger ($\beta = .124$), it too fails to reach statistical significance.

In general, the presence of a black counselor does not increase the overall college attendance rate of black students, but it does increase the rate of attendance in black colleges.

It is difficult to determine exactly how many southern black students attended traditionally black colleges, since the Wagner-Tenison file contains this information on only 69% of the schools these students attended. If we take, for the moment, the number of schools located by Wagner and Tenison as another index of college attendance, we find that 35% of the black seniors in all-black southern schools attended college, compared to 31% of the blacks from 90% white schools (with SES and achievement controlled). But from the all-black schools, 16% are going to white colleges, and 19% to black schools, while from the 90% white schools, 24% go to white colleges, and only 7% to black colleges. As table 22b indicates, this is not so much a function of the racial composition of the school as it is the color of the school counseling staff.

Table 22a

For Black Students Attending White Colleges, Regression Equations Predicting Individual-Level Scholarship Assistance in First Year From High School Percent White, High School Achievement, Black Student SES and Black Counselor in High School, by Region

	SOUTH				
	$\bar{X}$	σ	r	b	β
Dependent Variable:					
Scholarship, First Year	35.89	48.05	-	-	-
Independent Variables:					
School Percent White	44.03	31.80	.049	.071	.047
Achievement	41.64	6.442	.078	.962	.129
Black SES	2.304	.5915	-.199	-18.5	-.228*
Black Counselor	.6285	.6868	.027	(5.88)	(.084)

r^2 = .058

n = 287

* p <.05

	NORTH				
	$\bar{X}$	σ	r	b	β
Dependent Variable:					
Scholarship, First Year	52.07	50.03	-	-	-
Independent Variables;					
School Percent White	42.85	33.71	.094	.098	.066
Achievement	43.68	7.094	.274	2.43	.344*
Black SES	2.547	.5581	-.129	-22.3	-.249*
Black Counselor	.5322	.7048	.023	(8.80)	(.124)

r^2 = .132

n = 338

* p <.05

NOTE: Parentheses indicate the beta if this variable were to be entered in the equation next. This variable was not used in computing the r^2 for the equation.

Table 22b

For Black Students Attending College, Regression Equations Predicting Individual-Level Attendance At Black Colleges from High School Percent White, High School Achievement, Black Student SES and Black Counselor in High School, by Region

	SOUTH				
	$\bar{X}$	σ	r	b	β
Dependent Variable:					
Black College	38.29	48.65	-	-	-
Independent Variables:					
School Percent White	44.03	31.80	-.202	-.125	-.082
Achievement	41.64	6.442	.002	-.143	-.019
Black SES	2.304	.5915	.037	**1.89**	.023
Black Counselor	.6285	.6868	.273	16.3	.230*

r^2 = .080

n = 598

*p <.05

	NORTH				
	$\bar{X}$	σ	r	b	β
Dependent Variable:					
Black College	7.140	25.78	-	-	-
Independent Variables:					
School Percent White	42.85	33.71	-.071	-.060	-.078
Achievement	43.68	7.094	-.004	-.058	-.016
Black SES	2.547	.5581	.064	3.65	.079
Black Counselor	.5322	.7048	.093	(2.60)	(.071)

r^2 = .011

n = 476

NOTE: Parentheses indicate the beta if this variable were to be entered in the equation next. This variable was not used in computing the r^2 for the equation.

Table 22b shows the regression equations predicting the percentage of college attendees who are in black colleges from number of black counselors, high school percentage white, black achievement and black SES. We find only one statistically significant relationship in the table--southern black students have a 16 percent greater chance of attending a black college if they come from high schools where at least one counselor was black. The coefficient for student body composition is only -.125, indicating that the difference between an all-black and a 90% white school is only 11%, when race of counselor is not controlled. If race of counselor is omitted from the equation, this coefficient jumps to -.309, indicating a difference of 28% between all-black and 90% white schools in the percentage of black college students who are in black colleges. Most of this difference is thus attributable to the fact that black schools have black counselors. Even this understates the effect of counselor's race, since a separate analysis shows that the students who come from black schools with black counselors who do go to white schools tend to go to junior colleges rather than four-year schools.

Most of the literature on counseling black students argues for the need for more black counselors.

Phillips (1960) found that white northern counselors have more difficulty in establishing rapport with their black clients.

The white counselor may also have more difficulty seeing potential in a student who is not obviously "college material." Rehberg and Hotchkiss (1972) show that the type of counseling a student receives depends to a large extent on the student's interests and qualifications. They find, for example, that high achieving students are more likely to be encouraged to enter a four year college. Of course, one would expect the committed counselor to tailor his advice to the individual student, at least to some degree. The unfortunate part of this finding is that this makes it that much easier for white counselors to underestimate the college potential of black students. We see this in that white counselors apparently consider class rank to be more important as an indicator of college potential. This tends to support Russell's (1970) call for an increase in the number of black counselors and a change in the attitudes of white counselors.

But our data support a more complex argument, since they seem to suggest a need for both white and black counselors in black schools as well as white schools. If students in black schools are shunted into black colleges, and students in white schools into white colleges, it may be best to create situations where students are not shunted at all but are able to get advice from both white and black adults. We have some evidence to support this. Table 23 presents the results from a regression analysis predicting first year financial assistance in white colleges from school racial composition and race of counselor. Since we have already seen that schools with black counselors have students who obtain more scholarships, we would expect the figures in the second row (1 or 2 black counselors) to be higher than the figures in the first row (0 black counselors). This is the case 3 times out of 4, but the fourth case is important. In southern all-black schools, the highest rate of scholarship awards is in schools with white counselors. This suggests that these all-black schools, with largely black staffs, do not have sufficient information about opportunities in the "white" college system. Thus we have found one case where access to a white counselor is helpful.

Table 23

For Black Students in White Colleges, Individual-Level Rates of Scholarship Assistance in First Year Predicted from Number of Black Counselors in High School and High School Percent White, by Region, Statistically Controlled for SES

	South First Year Scholarship Rate When High School Is:		North First Year Scholarship Rate When High School Is:	
	0% White	90% White	0% White	90% White
0 Black Counselors	36.57	30.63	40.02	54.32
1-2 Black Counselors	31.02	48.84	46.77	60.90

NOTE: Percentages are derived from unstandardized regression coefficients for school percent white with SES also entered in the equation. The equations are:

South, 0 black counselors: $F = (-.0660)W + 3.072(S) + 29.69$
South, 1-2 black counselors: $= (.1980)W + 10.473(S) + 6.520$
North, 0 black counselors: $F = (.1589)W - 8.075(S) + 60.60$
North, 1-2 black counselors: $F = (.1578)W - 8.048(S) + 67.19$

where F = presence of financial aid (1 = scholarship, 0 = no)
W = school percent white
S = black student SES

More Counseling vs. Better Counseling

Counselors completing the NLS Counselor Questionnaire were asked to estimate the size of their caseloads as well as the number of hours per week spent counseling. From their responses, we computed for each school an average number of students per counselor-hour. Our hypothesis is that a smaller caseload would permit more individualized attention which might result in improved college attendance and survival rates. Using the average number of students per counselor-hour as an independent variable, we constructed a series of regression equations designed to assess its impact on college attendance, college survival, attendance at a four year college and first year scholarship assistance. We have reversed the signs of the regression coefficients so that a high score is associated with a small caseload. Tables 24a-d present our findings. Specifically, Tables 24a and 24b indicate that a smaller number of pupils per counselor-hour does nothing to increase either the college attendance or the college survival rates of black students. In all four cases (2 regions x 2 outcomes) the variable enters the equation with a standardized coefficient close to zero. Turning next to Table 24c, we find that in the South a small caseload has a positive but not statistically significant impact on four year college attendance (β = .118). However, this finding is rendered suspect by the almost equally strong negative relationship between small caseload and southern scholarship assistance seen in Table 24d (β = -.097). The northern data for both tables indicate that the effect of a small caseload on four year college attendance and first year scholarship assistance is again close to zero. On balance, there is nothing in this analysis to suggest that an increase in the total number of counselors would be a

Table 24a

Regression Equations Predicting Black Individual-Level College Attendance From High School Percent White, High School Achievement, Black SES and Number of Students Per Counselor-Hour, by Region

	SOUTH				
	$\bar{X}$	σ	r	b	β
Dependent Variable:					
College Attendance	48.09	49.98	-	-	-
Independent Variables:					
School Percent White	44.03	31.80	-.035	-.060	-.038
Achievement	41.64	6.442	.288	1.93	.249*
Black SES	2.304	.5915	.231	14.8	.175*
Students/Counselor-Hour	23.22	10.74	.010	(-.033)	(-.007)

r^2 = .113

n = 1283

p* <.05

	NORTH				
	$\bar{X}$	σ	r	b	β
Dependent Variable:					
College Attendance	56.14	49.64	-	-	-
Independent Variables:					
School Percent White	42.85	33.71	.057	.000	.000
Achievement	43.68	7.094	.290	1.78	.255*
Black SES	2.547	.5581	.189	9.43	.106*
Students/Counselor-Hour	17.76	8.172	-.048	(-.255)	(-.042)

r^2 = .094

n = 623

*p <.05

NOTE: The sign on "students/counselor-hour" has been reversed so that a high score is associated with a small caseload.

NOTE: Parentheses indicate the beta if this variable were to be entered in the equation next. This variable was not used in computing r^2 for the equation.

Table 24b

Regression Equations Predicting Black Individual-Level College Survival From High School Percent White, High School Achievement, Black SES And Number of Students Per Counselor-Hour, by Region

	SOUTH				
	$\bar{X}$	σ	r	b	β
Dependent Variable:					
College Survival	12.44	33.01	-	-	-
Independent Variables:					
School Percent White	44.03	31.80	-.031	-.036	-.035
Achievement	41.64	6.442	.337	1.58	.309*
Black SES	2.304	.5915	.194	6.98	.125*
Students/Counselor-Hour	23.22	10.74	.063	(-.046)	(-.015)

r^2 = .130

n = 1283

*p <.05

	NORTH				
	$\bar{X}$	σ	r	b	β
Dependent Variable:					
College Survival	13.37	34.05	-	-	-
Independent Variables:					
School Percent White	42.85	33.71	.094	.032	.032
Achievement	43.68	7.094	.339	1.49	.311*
Black SES	2.547	.5581	.177	4.39	.072
Students/Counselor-Hour	17.76	8.172	-.033	(-.125)	(-.030)

r^2 = .121

n = 623

*p <.05

NOTE: The sign on "students/counselor-hour" has been reversed so that a high score is associated with a small caseload.

NOTE: Parentheses indicate the beta if this variable were to be entered in the equation next. This variable was not used in computing the r^2 for the equation.

Table 24c

For Black Students Attending White Colleges, Regression Equations Predicting Individual-Level Attendance At a Four Year College From High School Percent White, High School Achievement, Black SES And Number of Students Per Counselor-Hour, by Region

	SOUTH				
	$\bar{X}$	σ	r	b	β
Dependent Variable:					
Four Year College	55.01	49.82	-	-	-
Independent Variables:					
School Percent White	44.03	31.80	-.046	-.080	-.051
Achievement	41.64	6.442	.392	2.88	.372*
Black SES	2.304	.5915	.175	7.66	.091
Students/Counselor-Hour	23.22	10.74	.135	(.547)	(.118)

r^2 = .164

n = 369

*p <.05

	NORTH				
	$\bar{X}$	σ	r	b	β
Dependent Variable:					
Four Year College	56.56	49.62	-	-	-
Independent Variables:					
School Percent White	42.85	33.71	.041	-.026	-.018
Achievement	43.68	7.094	.350	2.52	.360*
Black SES	2.547	.5581	.092	-1.96	-.022
Students/Counselor-Hour	17.76	8.172	-.026	(-.146)	(-.024)

r^2 = .123

n = 442

*p <.05

NOTE: The sign on "students/counselor-hour" has been reversed so that a high score is associated with a small caseload.

NOTE: Parentheses indicate the beta if this variable were to be entered in the equation next. This variable was not used in computing the r^2 for the equation.

Table 24d

For Black Students Attending White Colleges, Regression Equations Predicting Individual-Level Scholarship Assistance in First Year From High School Percent White, High School Achievement, Black SES and Number of Students Per Counselor-Hour, by Region

	SOUTH				
	$\bar{X}$	σ	r	b	β
Dependent Variable:					
Scholarship, First Year	35.89	48.05	-	-	-
Independent Variables:					
School Percent White	44.03	31.80	.049	.071	.047
Achievement	41.64	6.442	.078	.962	.129
Black SES	2.304	.5915	-.199	-18.5	-.228*
Students/Counselor-Hour	23.22	10.74	-.105	(-.434)	(-.097)

r^2 = .058

n = 287

*p <.05

	NORTH				
	$\bar{X}$	σ	r	b	β
Dependent Variable:					
Scholarship, First Year	52.07	50.03	-	-	-
Independent Variables:					
School Percent White	42.85	33.71	.094	.098	.066
Achievement	43.68	7.094	.274	2.43	.344
Black SES	2.547	.5581	-.129	-22.3	-.249*
Students/Counselor-Hour	17.76	8.172	-.029	(-.257)	(-.042)

r^2 = .132

n = 338

*p <.05

NOTE: The sign on "students/counselor-hour" has been reversed so that a high score is associated with a small caseload.

NOTE: Parentheses indicate the beta if this variable were entered in the equation next. This variable was not used in computing the r^2 for the equation.

productive policy in terms of either the college attendance or college survival of black students. We are instead left to conclude that it is the quality of counseling that matters, not the amount.

SUMMARY

The data from the NLS suggest that there is much to be pleased with in the present program of recruiting black students for college. Nearly half of black college students hold scholarships. And once achievement test performance is controlled we find an unmistakable pattern of scholarships going to lower socioeconomic status black students. Northern Upward Bound programs make a considerable contribution in this regard. Nonetheless, the analyses here indicate that more can be done.

In general, the data argue for the efficacy of adding black counselors to the staffs of predominantly white schools and white counselors to black schools. The presence of opposite-race counselors would help to establish a "pipeline" to black colleges, resulting in a wider range of opportunities for black students to pursue further education. Augmenting the number of black counselors could also initiate a dialogue in white schools which would help other staff members to understand that black students can be measured against their absolute college potential rather than their potential relative to the white students in a particular school. The data suggest that a thoughtful look at the way we think about class rank and an effort to reshape that thinking would lead to a higher rate of college attendance for blacks from predominantly white schools and equally important, a pattern of college attendance in four year schools with more scholarships, conditions which increase the probability of students completing college.

VI. A METHODOLOGICAL ISSUE: SELF-SELECTION

The major methodological issue in a non-experimental survey of this sort is self-selection. Self-selection means three things: highly motivated blacks anticipate better college preparation in white schools, they will therefore attend white schools and their outcome measures (college attendance and survival rates and achievement scores) will be higher. Consequently, the higher outcomes indicate simply the presence of a more highly motivated student body, not the presence of a school effect. We have to some degree already taken self-selection into account, since we have controlled on student SES. Thus if self-selection merely means that middle-class students are more likely to attend white schools in the North (as they are) this has been controlled in the equations already presented. We are now concerned with a subtler idea: that the students who go to desegregated schools are not merely more middle-class, but that they are more motivated (in some unmeasured or even unmeasurable way) than are students of the same social class in segregated schools. In the absence of data which will support a direct test of this self-selection hypothesis, we will apply a statistical test. To do this we aggregate the data again--this time going from the school as the unit of analysis to the school district. Although the analysis is more complex than this, the basic idea is that if the students (including those in both segregated and desegregated schools) in a desegregated district have higher achievement or college attendance rates, then this result cannot be due to self-selection, except in that some families may have moved from one school district to another in order to find better schools for their children. This form of self-selection remains unanalyzed. However, we think that most self-selection would occur within districts, rather than across them, especially since we are looking at black families. Although black families have some freedom to choose the school their children attend, they have less opportunity to choose their school district. We will test the hypothesis that self-selection is operating in two ways. First, we can simply compare college outcomes and achievement for blacks in desegregated and segregated districts. Second, we can use district degree of segregation as a variable in a school-level test of the self-selection hypothesis.

COMPARING SEGREGATED AND DESEGREGATED DISTRICTS

School districts vary considerably in the opportunities they offer to black students to attend predominantly white schools. In some districts there will be very few such schools and consequently only a small number of highly motivated blacks will be able to attend them. In other districts there will be many such schools and many blacks will attend them whether they want to or not. This analysis was done by dividing the school districts in the sample into those with high, medium and low levels of segregation defined by the mean percentage white of the schools attended by black students in the district. This measure of segregation is directly related to the opportunities blacks have for desegregation. The results are shown in Table 25. The first two columns of the upper

Table 25

The Comparative District-Level College Attendance, College Survival and Achievement Test Performance of Black and White Students by District Level of Segregation and Region*

SOUTH

	Mean Percent Black of School Attended By		Mean College Attendance Rate for		Mean College Survival Rate for		Mean Achievement Test Score for		n	
	Black	White	Black	White	Black	White	Black	White	Black	White
All Districts	56.64	18.86	51.68	59.99	13.36	22.30	41.76	51.28	1060	3186
Low Segregation	25.66	13.73	47.46	59.43	8.782	21.48	42.03	50.46	289	2073
Medium Segregation	60.13	32.45	50.85	59.66	12.91	21.68	41.30	50.27	440	639
High Segregation	85.61	24.20	54.90	56.24	16.21	27.95	42.77	51.92	272	217

NORTH

	Mean Percent Black of School Attended By		Mean College Attendance Rate for		Mean College Survival Rate for		Mean Achievement Test Score for		n	
	Black	White	Black	White	Black	White	Black	White	Black	White
All Districts	60.96	5.764	61.72	63.18	15.38	21.93	43.90	52.34	499	6914
Low Segregation	16.66	2.682	61.73	61.42	19.32	20.35	45.56	51.96	101	4797
Medium Segregation	52.78	20.23	65.40	68.23	14.99	21.09	43.77	52.57	184	666
High Segregation	79.47	19.18	59.25	61.04	13.89	23.49	42.87	51.18	190	240

*College attendance, college survival and achievement outcomes for the three types of districts (low, medium and high segregation) have been adjusted by indirect standardization to remove differences in SES and district size using the following formula:

For district type "i": $\text{Adjusted Rate}_i = (\text{True Rate}_i - \text{Expected Rate}_i) + \text{True Rate}$

All districts in region where: $\text{Expected Rate}_i = b_1 (\text{SES}_i) + b_2 (\text{Natural Log of School District Population}) + C$ in region

(b_1, b_2 and C taken from regression equations for all districts in region)

panel of Table 25 show that in low segregation districts in the South the average black student is in a school which is 26 percent black while the average white student is in a school which is only 14 percent black. This suggests that in the South low segregation districts often have very small black populations so that relatively little reassignment of students is required to desegregate. The medium segregation districts are probably the ones which have had the greatest amount of reassignment. The average black is in a school which is 60 percent black indicating that there are opportunities for attending predominantly white schools, but also that many blacks in these districts attend predominantly black schools. The average white student in a medium segregation district is in a school which is 32 percent black. In high segregation districts the average black student is in an 86 percent black school while the average white student is in a 24 percent black school. This suggests that these districts have large black populations and are segregated. The same overall pattern is evident in the lower portion of the table which contains the corresponding percentages for the North. The southern percentages are all slightly higher, reflecting the larger black population of the region.

If the relationship between school racial composition and student outcomes is due to self-selection we should find that low segregation districts do not differ from high segregation districts in student outcomes. Of course, low segregation districts may differ from high segregation districts in quality of education or opportunities to attend college, but presumably these differences will apply to white students as well as blacks. Therefore the "gap" in achievement or college attendance should not vary from one type of district to another if self-selection is the explanation for the findings in Sections II and III. Table 25 shows the mean college attendance rate, college survival rate, and achievement test score in each category of school district. The means in Table 25 are standardized to remove the effect of school SES and district size. This is done by indirect standardization: for each type of district the school mean black SES and mean district size are computed and used to predict an expected rate of achievement, college attendance or college survival based on the regression equations of Tables 5, 6 and 11. This expected rate is

then used in conjunction with the true rate to produce a standardized rate:

For District Type "i"

$$\text{Standardized Rate}_i = (\text{True rate}_i - \text{Expected rate}_i) + \text{True Rate}_{\text{(all districts in region)}}$$

In examining Table 25, let us look at the lower panel--the North--first. We see that the northern rate of black college attendance is not consistently related to the district's degree of segregation. This is consistent with the weak relationship found between college attendance and school racial composition. The remaining outcome variables, however, both show a decline in the "gap" between whites and blacks in low segregation districts. Blacks in low segregation districts are noticeably more likely to become college juniors in three years compared to those graduating from high segregation districts. But at the same time there is no difference in the white survival rates; consequently, the "gap" between whites and blacks declines from 14 percentage points (23.49-13.89) in the high segregation districts to only 1 percentage point (20.35-19.32) in the low segregation districts. The same pattern appears for northern achievement. Black achievement is higher in low segregation districts, while white mean achievement is unrelated to school district level of segregation; the difference between white and black achievement test scores is 8.3 in the high segregation districts, 8.8 in the medium segregation districts and only 6.4 in the low segregation districts. This suggests that there are no major differences in quality of education or college opportunities between these types of districts in the North, and that the favorable outcomes for blacks are due to school racial composition.

The pattern for the South is quite the opposite. The "gap" between black and white performance in Table 25 does not narrow as level of segregation decreases; however, Table 25 shows a virtually constant white-black difference in the three types of districts. The table also shows that whites are less likely to attend college in low segregation districts than in high segregation districts. This suggests that part of the difference in black college performance between high and low segregation districts is due to differences in general

opportunities rather than to the deleterious effects of desegregation.

At this point we have two tentative conclusions: the positive effects of predominantly white schools on black student performance in the North cannot be attributed to self-selection; and the low performance of blacks in predominantly white schools in the South may be due in part to differences between school districts. But there is a stronger test of the self-selection hypothesis which we present next.

A SCHOOL-LEVEL TEST OF THE SELF-SELECTION HYPOTHESIS

We will first state the self-selection hypothesis in empirical terms. From that statement we will then derive four corollaries which we will test. If the four corollaries fit the data, we will have reason to believe that self-selection *may* be operating; in any event, we will have failed to disprove its existence. If one or more of the corollaries is shown to be false, then we will have proven that self-selection is *not* the exclusive operative factor and we will be forced to either modify or discard the original hypothesis. Our hypothesis is as follows: Once school district size and student socioeconomic status are controlled, districts vary only in their opportunities for self-selection. Therefore, self-selection is the sole cause of differential student outcomes in white and black schools within districts. From our initial hypothesis we draw the following corollaries:

1) Since all districts are the same (except to the extent to which self-selection is operating), mean student outcomes must be identical in high, medium and low segregation districts.

This can be seen graphically in Figure 5a, where student outcomes (with standard SES and district size controls) are plotted against school percentage white. The dots represent the intersection of mean district percentage white and mean district student outcome in the three types of districts. Since black students in high segregation (H) districts have the fewest opportunities to attend white schools, the H dot will lie on the far left of the graph. Conversely, opportunities to attend white schools will be the greatest in low segregation (L) districts on the far right of the graph.

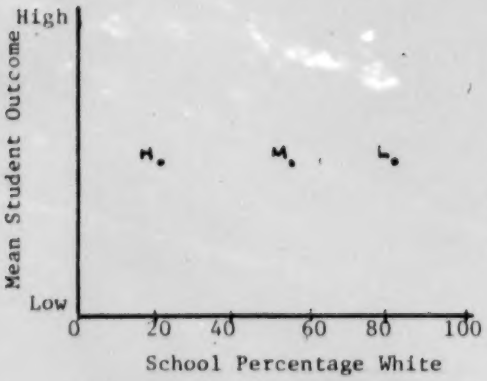


Fig. 5a: Mean School Percentage White and Mean Student Outcome by District Level of Segregation

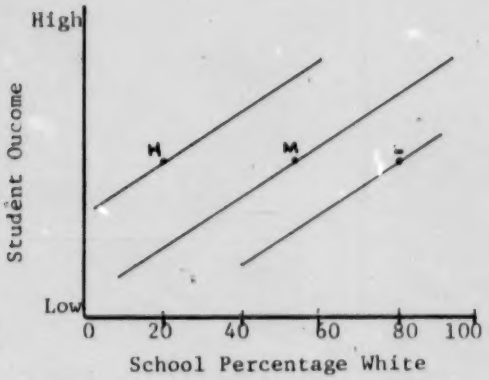


Fig. 5b: Regression of Student Outcome on School Percentage White by District Level of Segregation

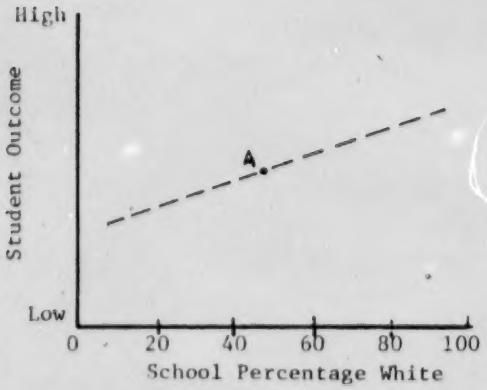


Fig. 5c: Regression of Student Outcome on School Percentage White for All Districts Combined

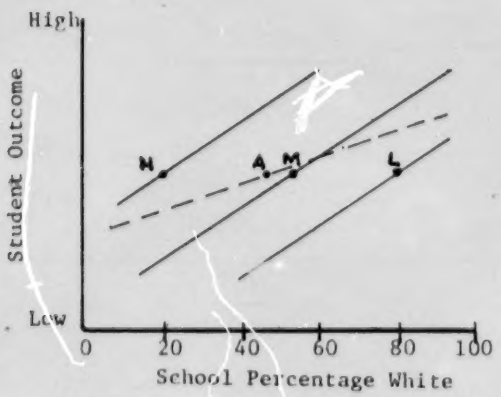


Fig. 5d: Superimposition of Figure 5c on Figure 5b

Figures 5a-d: Hypothetical Model of the Corollaries Derived from the Self-Selection Hypothesis

2) For each district type (H, M and L), the regression lines predicting student outcome from school percentage white will have positive slopes. (Again invoking standard SES and district size controls.) Further, the H line will always lie above the M line which in turn will always lie above the L line. (Figure 5b)

The slopes will be positive because each additional transfer of a talented black student to a white school will simultaneously raise the mean black achievement in the predominantly white school and lower the mean student outcome of the black schools in the district.

The H line will always be uppermost in the graph for three reasons: a highly segregated (H) district, by definition, affords few opportunities for blacks to attend white schools; the few blacks in H districts who do manage to attend white schools will be exceptionally motivated; and highly motivated students who have intentionally surmounted the barriers of segregation will have unusually high outcomes. Thus the blacks in predominantly white schools in H districts will have very high outcomes. At the same time, the all-black schools will not be "skimmed" of large numbers of talented blacks, so their achievement will remain fairly high. Conversely, the L line will always be lowermost in the graph for three reasons: in a low segregation (L) district, by definition, opportunities to attend white schools are plentiful; blacks in L districts who attend white schools will not need to be highly motivated, but will often be typical students with average outcomes; and blacks in L districts who remain in black schools will be conspicuous by their lack of motivation and thus will have very low outcomes. The M line will always fall between the H and L lines by the same reasoning.

3) If, for each type of district (H, M and L), the regression lines predicting student outcomes from school percentage white have positive slopes (corollary 2), then the same regression line computed for all districts combined (A) must also have a positive slope. (Figure 5c)

4) When the regression lines linking student outcome to school percentage white for each type of district (Figure 5b) are superimposed on the same regression line for all districts (Figure 5c),

the all-district line will be less positive than the H, the M and the L lines. The resulting graph can be seen in Figure 5d.

The regression line for all districts (A) must be constructed so as to minimize the distance of all plotted points from itself. It follows logically that a high density of points will significantly influence the placement of the all-district line. There are two instances where a high concentration of points occurs: 1) in low segregation (L) districts almost all students are in white schools and 2) in high segregation (H) districts almost all students are in black schools. Thus the left end of the H line and the right end of the L line will be the primary determinants of where the all-district line will fall. The resulting line shown in Figure 5d which links student outcome to school percentage white for all districts is less positive than any of the three separate lines representing district type (H, M and L).

If self-selection is not operating and desegregation has a beneficial effect on blacks, only corollary (3) will hold; the other three corollaries will not.

In examining the actual data, we turn first to the South using achievement as our first student outcome measure. Figure 6a plots mean black achievement against percentage white of the school for H, M and L districts as well as for all districts combined. The dots labeled H, M, L and A represent the intersection of mean achievement and mean percentage white for the corresponding lines. The first corollary of the self-selection hypothesis states that mean student outcome will be identical in the three types of districts (H, M and L). An initial examination of Figure 6a indicates that this is not the case for achievement. A closer inspection, however, reveals that the range between any two of the points is at most 1.4 points. Although the means are not identical, they are fairly close, so the criterion established by our first corollary has been met reasonably well. Our second corollary states that the H line must lie above the M line which in turn must lie above the L line. An examination of the graph indicates that H is above both M and L, but M is not above L. So our second corollary holds in two of the three cases. The third corollary has been met also; the dashed line representing all districts is

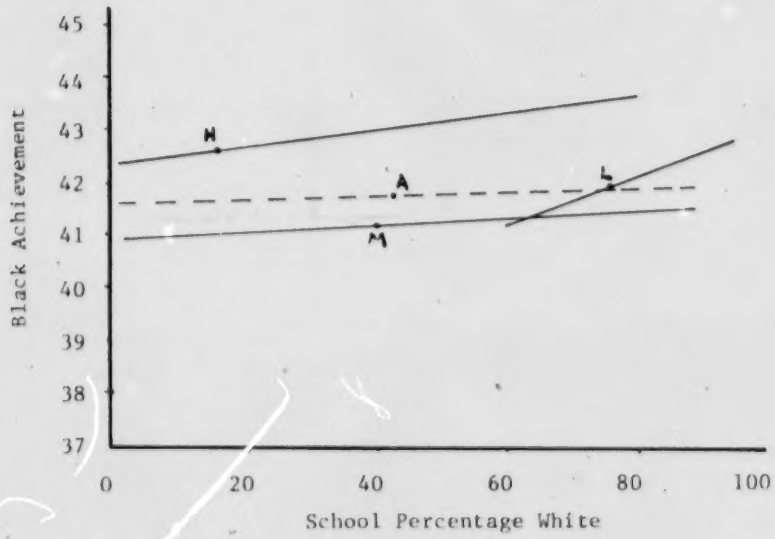


Figure 6a: Regression of Black Achievement on School Percentage White for High, Medium, and Low Segregation Districts and for All Districts Combined, South

positive. Finally, the H, M and L lines are all steeper than the dashed all-district line, as corollary (4) says they must be. In the case of southern achievement, then, the self-selection hypothesis provides an adequate explanation of our data. One of the effects of self-selection would be to make the all-district line look more positive than it is. Since the all-district line shown in Figure 6a is barely positive, it is probable that the true effect of school percentage white is at best zero, and perhaps negative.

We will next examine the college outcome variables for the South. The relationship of school percentage white to college attendance and college survival rates can be seen in Figures 6b and 6c respectively. A comparison of the dots labeled H, M and L indicates that our first corollary fails. In neither of the figures are the H, M and L means either identical or reasonably close. Our second corollary, however, is sufficient in five of the six cases, the exception occurring in Figure 6c where the H line does not lie above the M line. The data clearly destroy corollary (3). In both figures the all-district lines have distinctly negative slopes. Finally, our last corollary is borne out in five of the six cases. The H line in Figure 6c is the only line which is less steep than its corresponding all-districts line. In attempting to explain southern college outcomes solely by self-selection we have had somewhat less than a 50 percent success rate. To increase that rate, we are forced to modify our initial hypothesis so that corollaries (1) and (3) will better fit the data. We will suggest two alternative hypotheses.

The first hypothesis is that self-selection is operating and is partly concealing a true negative effect of predominantly white schools. Our adjusted hypothesis, of course, requires a comparable adjustment in corollaries (1) and (3). Corollary (1) now predicts that L districts will have the lowest outcomes because they have the highest percentage white. Conversely, H districts will have the highest outcomes. Corollary (3) now predicts that the slope of the all-districts lines must be negative. When we apply our qualified hypothesis we find that corollaries (1) and (3) are now sufficiently representative of the data. Since corollaries (2) and (4) have not been modified they continue to

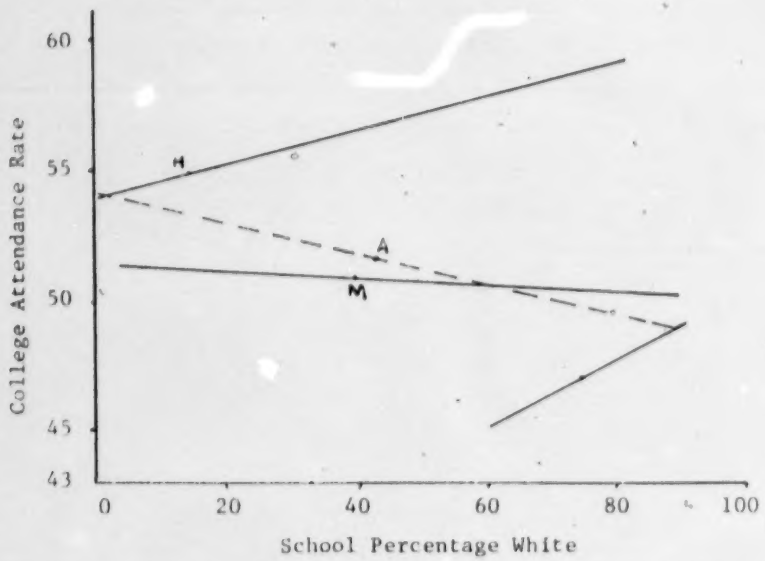


Figure 6b: Regression of College Attendance Rate on School Percentage White for High, Medium and Low Segregation Districts and for All Districts Combined, South

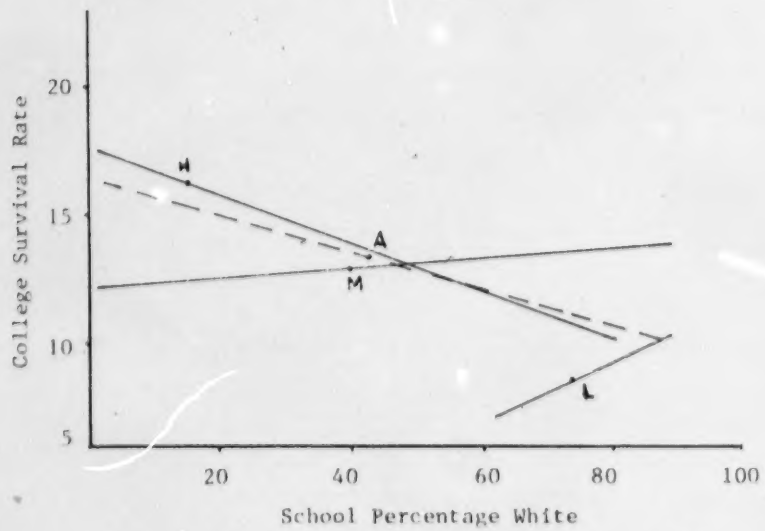


Figure 6c: Regression of College Survival Rate on School Percentage White for High, Medium and Low Segregation Districts and for All Districts Combined, South

work.

Interpretation of the southern data is complicated by the low college attendance and survival rates of the low segregation (L) districts. There is reason to suspect that this is due to something other than a racial factor, since white students' college outcomes are also low in these districts. Let us distinguish between a "desegregation effect", which is an effect of the racial composition of the school, and a "district effect", which is an effect of living in a district with desegregated schools, but which is not the result of school racial composition. Our second alternative hypothesis, then, is as follows: southern college outcomes can be explained by the presence of self-selection coupled with a strong district effect, with the desegregated districts providing the fewest college opportunities for both white and black students. Like our first alternative hypothesis, this hypothesis alters corollary (1) which now predicts that mean college outcomes will be lowest in the low segregation (L) districts and highest in the high segregation (H) districts; and corollary (3) which now predicts that the slope of the all-districts line will be negative. This qualified hypothesis, too, fits the data reasonably well. And again, since corollaries (2) and (4) have not been adjusted they continue to fit.

In light of this analysis, what conclusions can be drawn regarding the relationships between school racial composition and southern student outcomes? First, black student achievement test performance does not seem to be influenced by school racial composition. It is possible, however, that self-selection is operating to conceal a weak negative relationship wherein predominantly white schools have slightly lower black achievement levels than all-black schools. Second, predominantly white schools have a poor record regarding both black college attendance and survival rates. If self-selection is operating, the college outcomes picture is even more dismal than our data indicate. There is also the possibility that an unknown district factor is present which reduces college attendance and survival rates for both white and black students. If this is the case, the true performance of the predominantly white schools may be about the same as that of all-black schools. We can therefore conclude that attending a predominantly white school

has no beneficial effect in terms of either achievement or college outcomes, and it may have a negative effect.

We turn next to the data for the North, again using achievement as our first outcome measure. Figure 7a plots black achievement test performance against school percentage white for high, medium and low segregation districts as well as for all districts combined. Again the dots labeled H, M and L represent the intersections of mean achievement and average school percentage white. In examining the figure we find that our first corollary does not hold. Mean achievement in the three types of districts is not identical, the difference between any two of the H, M and L dots ranging from 1 to 2 points. The data also fail to meet the criterion established by our second corollary--the H line does not lie above either the M or the L line, nor does the M line lie above the L line. Corollary (3) states that the slope of the dashed all-districts line must be positive. The figure indicates that this is so. Our final corollary requires that the slope of the all-districts line be less positive than that of the H, the M *and* the L lines. The figure shows that this happens only once--the all-districts line is considerably less positive than the L line. Since three of the four corollaries have been shown to be false, we have proven that self-selection is not the exclusive factor in explaining differential achievement outcomes in the North. There is one possible alternative explanation which might save the self-selection hypothesis; this alternative is that self-selection operates in conjunction with a strong district effect, i.e., black students in low segregation districts have higher achievement test scores (controlling on SES and district size) not because they attend predominantly white schools, but for some other reason. Of course any modification of the original hypothesis requires subsequent adjustments in corollaries (1), (2) and (4). By reversing the predictions of these corollaries we can see that it is now possible to explain our data: a district effect could result in different mean achievement in the three types of districts (modified corollary 1); a district effect could also account for the placement of the H, M and L regression lines such that H was not above M, M not above L and H not above L (modified

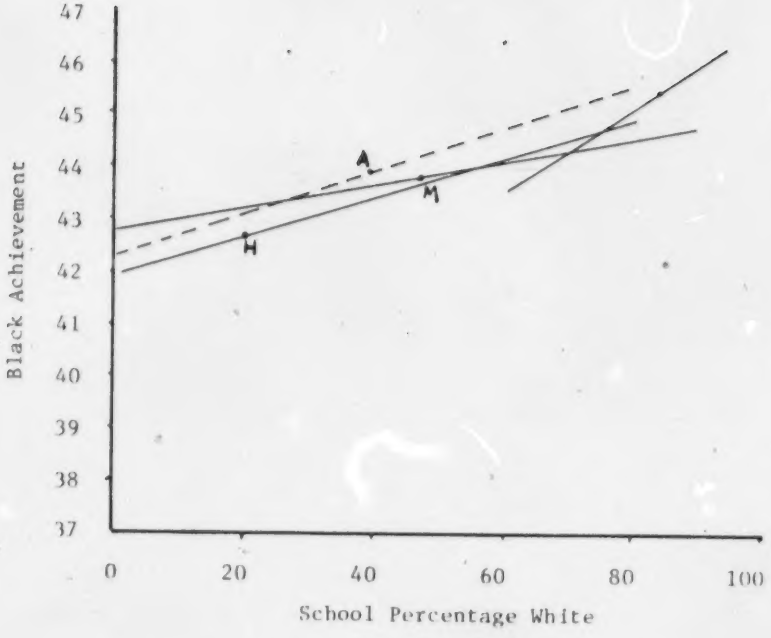


Figure 7a: Regression of Black Achievement on School Percentage White for High, Medium and Low Segregation Districts and for All Districts Combined, North

corollary 2); finally, a strong district effect could result in an all-district regression line that was more positive than any of the H, M and L lines (modified corollary 4). However, the district effect argument has a serious weakness. We observed earlier that there is little variation in white achievement test scores across the three types of districts. The district effect argument thus requires the presence of an unknown factor which works in desegregated districts to raise black performance but not white and is at the same time unrelated to school racial composition. It is difficult to imagine what such a factor might be.

We are therefore left with the following conclusion: in the North, black students attending predominantly white schools have higher achievement test scores than black students in predominantly black schools. Because this difference cannot be attributed either to self-selection alone or to a combination of self-selection and a district effect, it follows that attending predominantly white schools has a beneficial effect on black students.

Last we examine northern college outcomes. Figures 7b and 7c plot school racial composition against college attendance and survival rates respectively. Our first corollary states that the means on each of our college variables must be identical regardless of district level of segregation. The figures show that corollary one fails to adequately fit either of our outcome measures; the H, M and L points are not at the same height in either figure. Corollary (2) states that the H line must lie above the M line which in turn must lie above the L line. Figure 7b indicates that for northern college attendance our second corollary works in one out of three cases--the M line lies above the L line. The corresponding graph for college survival (Figure 7c) supports our second corollary perfectly--H is above M, M is above L and H is above L. Corollary (3) works for both of our college variables; the dashed all-districts line has a positive slope in both cases. Finally, corollary (4) requires that the slope of the dashed all-districts line must be less positive than the H, the M and the L lines. An examination of the two figures shows that the data fit the corollary in five of the six cases (the only exception occurs for college

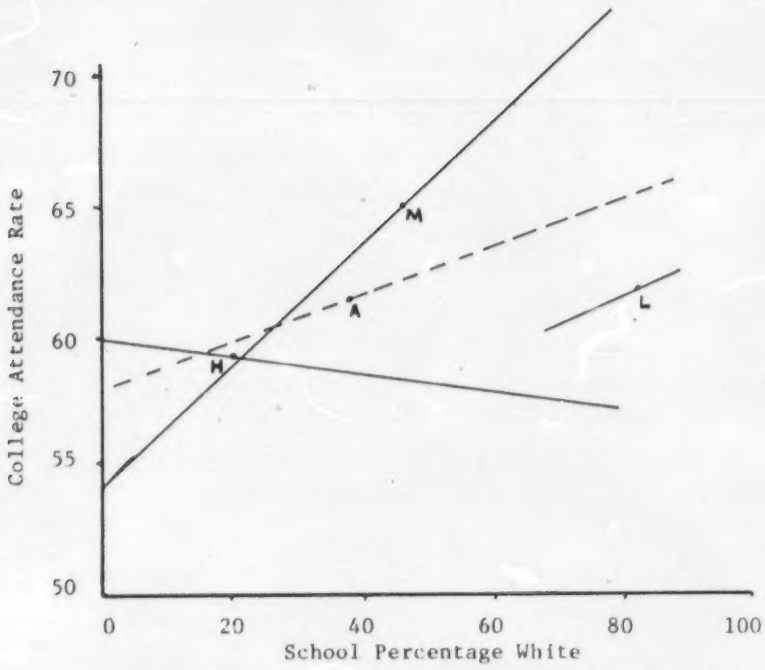


Figure 7b: Regression of College Attendance Rate on School Percentage White for High, Medium and Low Segregation Districts and for All Districts Combined, North

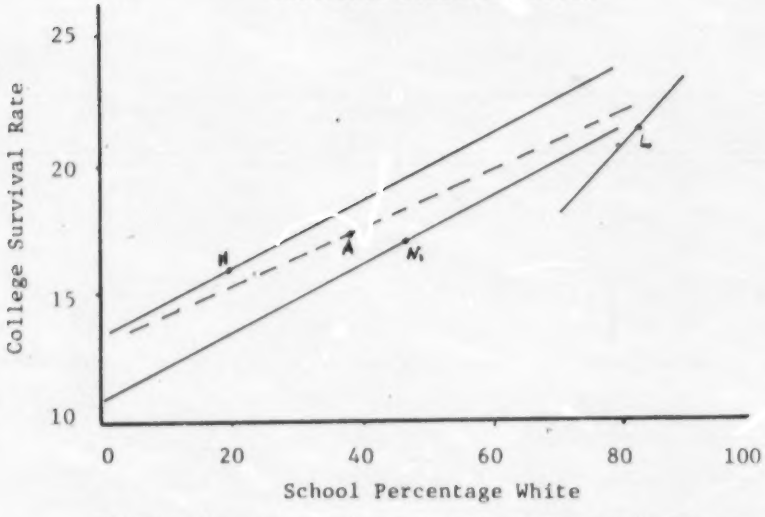


Figure 7c: Regression of College Survival Rate on School Percentage White for High, Medium and Low Segregation Districts and for All Districts Combined, North

attendance where the all-districts line is steeper than the H line), but in three of the five cases the differences in slopes are barely observable (the L line in 7b and the M and H lines in 7c are only slightly steeper than the all-districts line).

What conclusions can we draw from the analysis? We have shown that northern blacks from predominantly white schools are slightly more likely to attend college and considerably more likely to remain in college than blacks from predominantly black schools. In terms of college attendance our data offer very little support for the self-selection hypothesis--three of our four corollaries fail to stand up to the data, and the one that does hold unequivocally is corollary (3) which would be true if desegregation were beneficial. Our soundest conclusion here would seem to be that the slightly higher attendance rates of blacks in low segregation districts are not completely due to self-selection, and school percentage white must be playing at least a small role. Nor can our college survival pattern be easily attributed to self-selection. Only corollaries (2) and (3) are clearly supported by the data. High and low segregation districts continue to show appreciable real differences in the college survival rates of their black alumni. Attributing these differences to the presence of a district effect (i.e., that desegregated districts benefit blacks, but not because of desegregation) is also suspect--we have already seen that white survival rates do not vary with district level of segregation, and it is in low segregation districts that the gap in survival rates between whites and blacks is the narrowest.

INTERPRETATION

We noted earlier that there is almost no research on the relationship of school racial composition to black college attendance. There is some literature on the relationship of school racial composition to achievement, however, and this literature provides another way to look at self-selection. St. John (1975) reviews a large number of studies of the effects of desegregation on achievement. She cites thirteen desegregation efforts in which black participation was voluntary and

eight where participation was mandatory. If the self-selection of superior students is a major factor, the voluntary programs should look more successful than the mandatory programs. However, this is not the case. Twelve of the thirteen voluntary projects have relatively unambiguous evaluations and four of these do not show any positive effects.* Of the eight mandatory reassignment programs in northern school districts, six had relatively unambiguous evaluations and only one of these shows no positive effects.**

There is some evidence in the literature to suggest that self-selection *should* be working in the North. Bullough (1967, 1972) and Crain and Weisman (1972) both show that black residents of integrated neighborhoods are more likely to have had bi-racial school experiences and to show a stronger internalization of locus of control than residents of segregated neighborhoods. It may be that self-selection is operating, but is being swamped by other more important factors, including a desegregation effect.

One possibility is that in the North, the self-selection of college-bound students into predominantly white schools may be offset by a self-selection of troubled black students into white schools. We suspect that in the North there are a significant number of black parents who elect a predominantly white school for their child not

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*The one ambiguous project is the Boston METCO program where the evaluations by Walberg and Armor are reported by St. John as conflicting. The four projects scored as showing no positive effects are the evaluations by Fox, Rentsch, the Shaker Heights School Board and Gardner. The evaluations which show some positive and no negative effects are the studies by Beker, Banely, Laird, Wolman, Heller, Rock, Zdep and the evaluations of the New Haven "Project Concern" (of the four evaluations of that project, all show some positive results and one shows some negative results).

**The Carrigan evaluation of Ann Arbor shows no positive effects, but the "black" school is 52 percent white in that case. The evaluation conducted by the Rochester School Board is described in an ambiguous manner. St. John indicates a negative effect for a portion of the evaluations with a minus sign in a table, but her brief description of the projects suggests that the effects were not negative in any area. Both of these projects were discarded in making this computation. The six remaining mandatory projects are the evaluation by Moorfield, which shows no positive effects, and the evaluations by Banks, Dresler, Johnson, the Sacramento School Board and Sloane, all of which show some positive effects.

because he is college-bound, but because he is doing badly in the predominantly black school he attends.* In the South, mandatory plans may limit the number of gifted blacks voluntarily entering predominantly white schools, but there may be almost no parents of troubled black students who would believe that a child having difficulty in a black school would have an easier time in a school with a large number of whites. This makes it plausible that the net amount of self-selection of college-bound students into predominantly white schools is greater in the South than in the North, despite the importance of mandatory desegregation plans in that area.

SUMMARY

This section has attempted to test the elusive hypothesis that what appears to be a beneficial effect of attending predominantly white schools in these data is in fact due to the self-selection of more motivated or more talented black students into predominantly white schools. A test of this hypothesis was constructed by aggregating the data to the district level. The conclusions are not unambiguous, but seem to be as follows: in the South, the lack of a relationship between school racial composition and black achievement test scores may be partly due to self-selection; it may be that achievement is actually lower in predominantly white schools. Self-selection may also be operating in the case of southern black college attendance and college survival. If so, the apparent negative effects of attending predominantly white schools may be even stronger than they appeared to be in Section III. However, we have also found that districts where many blacks attend predominantly white schools have very low college attendance and survival rates for whites as well as

*A self-selected student in the Boston METCO plan who is not obviously gifted or college-bound is described by Thomas Cottle (1976) in "Matthew Washington Who Had Death in His Eyes". While we do not know why this student attends school in what he calls "Whitesville", it is clear that he is less likely to do well academically there than most blacks would. For a portrait of southern volunteers for desegregation, see Coles (1964).

blacks, so perhaps these poor college outcomes are not due to desegregation. Whichever is true, there is nothing here to make the reader feel satisfied with the educational opportunities provided for blacks in predominantly white schools in the South.

In the North, the self-selection of gifted or highly motivated blacks into predominantly white schools does not appear to be a major factor. We conclude that the effects of attending predominantly white schools in the North are indeed beneficial, both in terms of achievement test performance and college outcomes.

VII. CONCLUSIONS

Our analysis of the relationship between high school racial composition and college attendance for black students has revealed a regional interaction effect. In the North, we find that black graduates of predominantly white high schools are slightly more likely to attend college, and nearly twice as likely to be college juniors in three years, once differences attributable to social class and school district size have been removed. Apparently the important positive effect of attendance at a predominantly white high school is in reducing the college drop out rate for black alumni. We also found that black achievement test scores are noticeably higher in predominantly white schools. Once social class and district size are controlled, we find that blacks in predominantly white schools score about one-half of a standard deviation higher than those in predominantly black schools. However, none of these differences appear in the South. Southern blacks who attend predominantly white schools have achievement test scores which are no higher and college attendance and college survival rates which may actually be slightly lower than those of blacks from segregated schools.

We have no explanation for the regional differences in the data. We find that blacks are placed at a disadvantage in predominantly white schools because their absolute level of achievement translates into a lower relative level when they are compared to high-performing white students in the same school. However, this is a problem in both the North and the South and hence does not explain the regional differences. Similarly, we find that the more white teachers in the school (controlling on the percentage white of the student body), the lower the grade standing of blacks relative to whites and the lower the college attendance rates. But again, this problem is common to both regions. One reason why predominantly white schools in the South have low black college attendance rates may be that they do not send very many black students to black colleges. Black colleges have been the traditional form of higher education for black students in segregated

schools. The remaining all-black high schools in the South still maintain a tradition of sending black students into these schools. The predominantly white schools generally do not. They send a somewhat larger number of blacks to predominantly white schools, but not enough to make up for the students who are not going to black colleges. Since there are two separate systems of higher education in the South, a black student has a definite advantage if he is in a school with a bi-racial staff. For example, we find that just as the presence of a black counselor in a predominantly white school increases the number of blacks obtaining college scholarships, the presence of a white counselor in an all-black school works the same way.

There are additional advantages to having black counselors. Black counselors in both regions are less sensitive to the relative class standings of black students so that the deleterious effects of going to school with higher-achieving whites are reduced. We also find evidence that in northern schools, the Upward Bound Program seems to be effective.

The failure of predominantly white southern schools to provide greater benefits to black students than those received in all-black schools may be only a temporary phenomenon. Most of the black students in the NLS sample did not begin to attend schools with whites until late in their public school career; perhaps the next generation will fare better. And perhaps the attitudes of southern white teachers in predominantly white schools will change for the better as these teachers adapt to the presence of black students. There is evidence that staff racial attitudes are an important factor in the performance of black students. An unpublished analysis of the Southern Schools data shows that teacher racial attitudes are linked

to student achievement. Gerard and Miller (1975) reach the same conclusion from the Riverside data. Felice (1974) argues that the hostile teachers in previously white receiving schools had a strong negative effect on black student test performance in Waco, Texas.

Since these results are derived from a cross-sectional design, they are subject to the usual qualifications about inferring causality from correlations. There is always the possibility of the apparent effects being due to un-measured differences between students in segregated and desegregated schools. This is especially troubling if students are free to choose the type of school they attend. However, an effort was made to test the counter-hypothesis that these effects are due to the self-selection of brighter or more highly motivated black students into predominantly white schools. There was no evidence that the findings in the North could be explained by self-selection--the less segregation in the northern school districts, the smaller the black-white gap in either achievement or college outcomes for the district as a whole. While our controls are not as stringent as those in some of the best evaluations of desegregation in northern districts, we do look at the impact of racial composition in a very large number of districts simultaneously and at the cumulative long-term effects of school racial composition rather than attempting to draw conclusions based on only the first year or so in a single district.

Further research is needed to help us understand what it is about northern predominantly white schools that provides a better educational environment for blacks. It would be useful to replicate this study, adding measures of friendly student interracial contact and teacher racial attitudes and then analyzing the college aspirations of the white students. With these additional variables it would be possible to test several competing hypotheses:

- Blacks benefit from desegregation because they are thrown into contact with whites who have more definite aspirations for college.
- Blacks benefit from desegregation because they are able to test their academic performance against whites and therefore learn that they can compete in a "white man's world."

- Friendly contact with whites in school reduces the perhaps subconscious anxiety that blacks have about race relations, freeing their energies for academic work.

Policy Issues

Several policy recommendations can be drawn from this analysis. The data indicate that present federal and local policies have been fairly effective in eliminating inequality of opportunity due to poverty. At several points in the analysis, we find that for black students family socioeconomic status plays a relatively unimportant role. For scholarship holding, we find that students from poor families have an advantage which is what one might hope would be the case. The apparent effectiveness of the Upward Bound Program is also encouraging.

It is clear from these data that there are policies which would increase black college attendance, although the policy differs for different types of schools. The lowest college attendance rates are from the South, in both all-black and predominantly white schools.

The white-black difference in both college attendance and college survival is greater in the South than in the North. Part of the reason is that desegregation is not producing higher college attendance rates in the South, as it is in the North. Time may overcome part of this problem, since the 1972 seniors in southern white high schools were still going through the initial stresses of desegregation. But we don't feel we should ignore the problem. The problems with desegregated schools seems to hang on the color of the staff more than the color of the student body. An increase in the amount of inservice human relations training for white teachers prior to desegregation would probably help. The 1972 evaluation of the Emergency School Assistance Program (NORC, 1973) indicates to us that human relations programs can be effective. More directly we recommend that school desegregation be coupled with staff desegregation.

Staff desegregation would also help students in all-black schools in the South. We also suspect that black students are not being

adequately counseled about the opportunities provided by the dual college system in the South. Black students in all high schools need to know about opportunities in both black and white colleges. This suggests that southern counselors need to know more about both kinds of schools, and that biracial counseling teams in both black and white schools would be helpful.

In the North, the major problem is the low college survival rate of students from black high schools. This is not because they are not attending four-year colleges, so we can only assume it reflects a higher dropout rate. This seems reasonable, since the student from a black school experiences the stress of the transition to desegregated schooling in college. In areas where desegregation is politically or demographically infeasible, programs in either high school or college which help black students make the adjustment to the white college would help.

Part of the burden of recruiting black students falls on institutions of higher education and on funding sources. One finding in these data is that in the South, where blacks are poorer, there is less scholarship money in white schools for them. Finally, there is complex issue of criteria for admission. On the one hand, it is well known that reliance of achievement test scores will hurt black opportunities. On the other hand, the obvious alternative is grades, and using class ranking will discriminate against blacks in desegregated schools. Such a policy would not only be unfair, it would work to contradict our national policy of endorsement of desegregated schooling. One option is the use of achievement testing with published black norms; but this seems politically infeasible. Whatever criteria is used, it makes sense to evaluate blacks relative to other blacks, not relative to whites who have generations of advantage working in their favor.

We realize that in making these recommendations we are essentially arguing for a double standard. If one used a single standard to evaluate black and white students and such a standard relied heavily upon test scores, then one would argue that the present small number of blacks reaching the third year of college is to be expected. Conservative thinkers such as Nathan Glazer (1976) argue that blacks should only receive educational or employment opportunities on the basis of objective criteria, and that anything else is a form of discrimination. While this may be a defensible position philosophically, we should point out that it is a position which is not shared by the black teachers in our sample, who are noticeably more likely to be in schools where large numbers of blacks go on to college.

APPENDIX: EQUATIONS USED IN SELF-SELECTION TEST AND PATH ANALYSIS

Tables 1 and 2 contain the data used to compute Figures 6-7 used in testing the self-selection hypothesis. The tables give for all districts and for the districts where the mean percent black of the black students' schools is below 40 percent, between 40 and 75 percent, and above 75 percent, the following information, by region.:

The mean college attendance and college survival rates and mean achievement test scores;
The mean SES of black students;
The mean natural log of the school district population;
The mean percent black of the schools attended by blacks;
The unstandardized regression coefficients of SES, district population, and school percentage black in predicting college attendance (1st column), college survival (called "junior status") (2nd column) and achievement (3rd column).

Below these data are the corresponding data for whites.

Table 3 contains the means, standard deviations and unstandardized regression coefficients from the equations used to construct the path diagrams in Figures 1-4.

Table 1: Regression Equations Used to Compute Figures 6a-c

(South)

	All Districts			Mean % Black of schools attended by blacks less than 40%		
	dependent variable			dependent variable		
	attend college	junior status	ach. test	attend college	junior status	ach. test
Blacks:						
dependent var. mean	51.68	13.36	41.76	46.92	9.95	42.01
SES mean/1000	-6.344	-6.844	-6.844	-6.85	-6.85	-6.85
ln district pop mean	9.853	9.853	9.853	9.15	9.15	9.15
% Black in school mean/100	.56	.56	.56	.26	.26	.26
b SES	2.22	1.11	.45	3.03	.91	.31
b ln pop	.758	-1.705	.02	-.195	-.134	13.55
b % black	5.57	6.77	-.33	-13.6	-11.8	-4.64
constant	56.25	38.435	45.19	69.41	20.44	44.12
Whites:						
dependent var. mean	59.99	22.299	51.28	59.24	21.36	51.11
SES mean/1000	.178	.178	.178	-.004	-.004	-.004
ln pop mean/100	9.545	9.545	9.545	9.33	9.33	9.33
% Black in school mean	.19	.19	.19	.13	.13	.13
b SES	3.65	2.29	.59	3.42	2.42	.61
b ln pop	-2.183	-1.372	-.13	-1.51	-1.81	-.17
b % black	2.21	-3.25	-1.95	7.07	-.63	-3.10
constant	35.0	35.05	52.75	72.33	38.33	55.19

	Mean % Black of schools attended by blacks 40-75%			Mean % Black of schools attended by blacks over 75%		
	dependent variable			dependent variable		
	attend college	junior status	ach. test	attend college	junior status	ach. test
Blacks:						
dependent var. mean	49.74	12.53	41.09	56.66	14.89	42.89
SES mean/1000	-7.271	-7.271	-7.271	-6.459	-6.459	-6.459
ln pop mean	9.63	9.63	9.63	11.03	11.03	11.03
% Black in school mean/100	.60	.60	.60	.86	.86	.86
b SES	1.74	1.47	.46	1.20	2.51	.82
b ln pop	1.33	-1.37	-.30	1.72	-3.76	-.41
b % black	1.25	-1.78	-.67	-6.38	9.28	-1.61
constant	48.83	37.51	47.78	50.81	64.60	54.12
Whites:						
dependent var. mean	59.69	21.69	50.33	65.99	27.79	52.21
SES mean/1000	.319	.319	.319	.990	.990	.990
ln pop mean	9.77	9.77	9.77	11.02	11.02	11.02
% Black in school mean/100	.32	.32	.32	.24	.24	.24
b SES	3.65	1.69	.47	3.66	2.40	.56
b ln pop	-4.62	-2.29	.09	-4.71	-.71	.09
b % black	-11.56	-7.40	.75	-20.09	-2.29	-1.30
constant	107.36	45.89	50.82	119.11	33.84	50.98

Table 2: Regression Equations Used to Compute Figures 7a-c

(North)

	All Districts			Mean % Black of schools attended by blacks less than 40%		
	dependent variable			dependent variable		
	attend college	junior status	ach. test	attend college	junior status	ach. test
Blacks:						
dependent var. mean	61.72	15.38	43.90	57.15	15.94	43.84
SES mean	-4.459	-4.459	-4.459	-5.049	-5.049	-5.049
ln district pop mean	11.45	11.45	11.45	9.11	9.11	9.11
% Black in school mean	.61	.61	.61	.17	.17	.17
b SES	2.14	.95	.42	.35	.48	.11
b ln pop	1.41	1.21	.63	-1.36	.87	.15
b % black	-8.29	-10.98	-4.09	-11.01	-26.66	-7.76
constant	60.13	12.47	41.09	73.13	14.90	44.34
Whites:						
dependent var. mean	63.18	21.94	52.34	62.14	21.42	52.16
SES mean	1.016	1.016	1.016	1.354	1.354	1.354
ln pop mean	9.22	9.22	9.22	8.72	8.72	8.72
% Black in school mean	.06	.06	.06	.03	.03	.03
b SES	3.08	2.29	.57	3.29	2.52	.65
b ln pop	.65	-.59	-.02	-.78	-1.88	-.28
b % black	8.72	8.01	1.56	3.52	-3.88	1.99
constant	53.51	24.59	51.85	64.36	34.53	53.69

	Mean % Black of schools attended by blacks 40-75%			Mean % Black of schools attended by blacks over 75%		
	dependent variable			dependent variable		
	attend college	junior status	ach. test	attend college	junior status	ach. test
Blacks:						
dependent var. mean	66.64	15.39	43.90	59.91	14.72	43.3
SES mean	-3.676	-3.676	-3.676	-4.731	-4.731	-4.731
ln pop mean	11.16	11.16	11.16	12.35	12.35	12.35
% Black in school mean	.53	.53	.53	.79	.79	.79
b SES	1.78	.76	.45	3.41	1.04	.68
b ln pop	.46	1.68	.45	2.70	-.04	1.11
b % black	-22.87	-12.85	-2.27	3.32	-12.77	-3.66
constant	80.09	6.22	41.80	40.01	30.30	35.71
Whites:						
dependent var. mean	69.94	20.35	52.62	57.38	17.43	50.06
SES mean	1.175	1.175	1.175	-.828	-.828	-.828
ln pop mean	11.08	11.08	11.08	12.31	12.31	12.31
% Black in school mean	.20	.20	.20	.19	.19	.19
b SES	1.32	1.72	.49	3.09	3.51	.33
b ln pop	.01	1.09	.31	3.60	1.17	.22
b% black	2.22	21.4	2.05	-4.01	8.95	-.92
constant	67.84	1.98	48.16	16.33	4.19	47.87

TABLE 3: REGRESSION EQUATIONS USED TO CONSTRUCT PATH MODELS IN FIGURES 1-4

SOUTH

				Dependent Variables				
				% W Teachers	Ach	Class Rank	College Attend.	College Survival
			$\bar{x}$	64.9	41.8	47.2	51.7	13.4
	$\bar{x}$	σ	σ	22.5	3.45	17.7	24.6	16.4
Class Rank							.127	.093
% W Teachers						-.148	-.122	-.099
Ach						1.423	1.70	.997
SES	2.32	.361			4.4		16.6	10.5
% W Students	43.4	30.7		.556	.004	-.187	.026	.041
r^2				.574	.214	.307	.200	.175

				% W Teachers	Ach	Class Rank	College Attend.	College Survival
			$\bar{x}$	79.5	43.9	46.7	61.7	15.4
	$\bar{x}$	σ	σ	16.8	4.59	16.4	25.7	21.3
Class Rank							.374	.216
% W Teachers						-.312	-.241	-.224
Ach						1.20	1.80	1.58
SES	2.55	.356			4.5	-9.2	15.5	3.9
% W Students	31.04	33.9		.384	.027	-.106	.168	.168
r^2				.605	.189	.289	.280	.204

REFERENCES

Alexander, C. Norman, Jr., and Ernest G. Campbell. "Peer Influences on Adolescent Educational Aspirations and Attainments," American Sociological Review, Vol. 29, 1964, pp. 568-575.

Alexander, Karl and Bruce K. Eckland. "Contextual Effects in the High School Attainment Process," American Sociological Review, Vol. 40, No. 3 (June, 1975), pp. 402-416.

Armor, David J. "The Evidence on Busing," The Public Interest, Vol. 28 (Summer 1972), pp. 90-126.

Bain, R. K., and J. G. Anderson, "School Context and Peer Influences on Educational Plans of Adolescents," Review of Educational Research, Vol. 44, 1974, pp. 429-445.

Barton, Allen H., "Comments on Hauser's 'Context and Consex,'" American Journal of Sociology, Vol. 76, pp. 514-478.

Boyle, Richard P. "On Neighborhood Context and College Plans (III)," American Sociological Review, Vol. 31 (October 1966), pp. 706-707.

Bullough, Bonnie, "Alienation in the Ghetto," American Journal of Sociology, Vol. 72 (March 1967), pp. 469-478.

Bullough, Bonnie Louise, "Alienation and School Segregation," Integrated Education (March-April, 1972).

Coleman, James, "Implications of the Findings on Alienation," American Journal of Sociology, Vol. 70 (July 1964), pp. 76-78.

Coleman, J.S., E. Q. Campbell, C. J. Hobson, J. McPartland, A.M. Mood, F. D. Weinfeld and R. L. York, Equality of Educational Opportunity (Washington: United States Government Printing Office), 1966.

Coles, Robert, Children of Crisis (Boston: Little, Brown and Company), 1964.

Cottle, Thomas J., Busing (Boston: Beacon Press), 1976.

Crain, Robert. "School Integration and the Academic Achievement of Negroes," Sociology of Education, Vol. 44 (Winter 1971), pp. 1-26.

Crain, Robert L., and Carol Sachs Weisman, Discrimination, Personality and Achievement, A Survey of Northern Blacks (New York: Seminar Press), 1972.

Crain, Robert L., "Why Academic Research Fails to be Useful," School Review, Vol. 84, No. 3 (May 1976), pp. 337-351.

Davis, J.A., "The Campus as a Frog Pond," American Journal of Sociology, Vol. 72 (July 1966), pp. 17-31.

Duncan, Otis Dudley, "Path Analysis: Sociological Examples," American Journal of Sociology, Vol. 72, 1966, pp. 1-16.

Duncan, Otis Dudley, Archibald O. Haller and Alejandro Portes, "Peer Influences on Aspirations: A Reinterpretation," American Journal of Sociology, Vol. 74, 1968, pp. 119-137.

Felice, Lawrence G., The Effects of School Desegregation on Minority Group Student Achievement and Self Concept: An Evaluation of Court Ordered Busing in Waco, Texas, Final Report to the U.S. Department of Health, Education, and Welfare, Office of Education, Report No. ED 094096, 1974.

Froomkin, J. Students and Buildings, Rep. OE-50054, U.S. Office of Education, 1968.

Gardenhire, J.F. Study of College Retention of 1965 & 1966 Upward Bound Bridge Students, Report to the U.S. Office of Economic Opportunity by Educational Associates, Inc., Washington, D.C., 1968.

Gerard, Harold B. and Norman Miller, School Desegregation: A Long Range Study (New York: Plenum Publishers), 1975.

Glazer, Nathan, Affirmative Discrimination (New York: Basic Books), 1976.

Haller, A.O. and C.E. Butterworth, "Peer Influences on Levels of Occupational and Educational Aspiration," Social Forces, Vol. 38, 1960, pp. 289-295.

Haller, A.O. and A. Portes, "Status Transmission Processes," Sociology of Education, Vol. 46, 1973, pp. 51-98.

Hauser, Robert M. "Context and Consex: A Cautionary Tale," American Journal of Sociology, Vol. 75, Part II, pp. 645-664.

Hauser, Robert M., "Reply to Allen Barton," American Journal of Sociology, Vol. 76, pp. 517-520.

Jencks, C.S., Inequality (New York: Basic Books), 1972.

Kirby, David J., T. Robert Harris, Robert L. Crain and Christine H. Rossell, Political Strategies in Northern School Desegregation (Lexington: D.C. Heath and Company), 1973.

Kornegay, F.A., "College Enrollment of Former Upward Bound Students: A Profile and Summary," Idea Exchange, Vol. 3, No. 11, 1968, pp. 24-26.

Mahan, Thomas W., and Aline M. Mahan, "The Impact of Schools on Learning: Inner-City Children in Suburban Schools," Journal of School Psychology, Vol. 9, No. 1, 1971, pp. 1-11.

Mahard, Rita E., "Codebook for Aggregate File NLSAGG2," (Unpublished, The Rand Corporation).

McDill, Edward L., Leo C. Rigsby and Edmund D. Meyers," Educational Climates of High Schools: Their Effects and Sources," American Journal of Sociology, Vol. 74, 1969, pp. 567-586.

Meyer, John W., "High School Effects on College Intentions," American Journal of Sociology, Vol. 76, No. 1 (July 1970), pp. 59-70.

Michael, John A. "High School Climates and Plans for Entering College," Public Opinion Quarterly, Vol. 25, pp. 585-595.

Michael, John A. "On Neighborhood Context and College Plans (II)," American Sociological Review, Vol. 31 (October 1966), pp. 702-706.

Moynihan, Daniel P. and F. Mosteller, On Equality of Educational Opportunity (New York: Random House), 1972.

Narot, Ruth E., "The Effects of Integration on Achievement," in National Opinion Research Center, Southern Schools: An Evaluation of the Emergency School Assistance Program and of School Desegregation--Vol. II, NORC Report 124B (Chicago: National Opinion Research Center), 1973, pp. 60-82.

National Opinion Research Center, Southern Schools: An Evaluation of the Effects of the Emergency School Assistance Program and of School Desegregation--Vols. I and II, NORC Reports 124A and 124B (Chicago: National Opinion Research Center), 1973.

Nelson, J.I., "High School Context and College Plans: The Impact of Social Structure on Aspiration," American Sociological Review, Vol. 37, 1972, pp. 143-148.

Phillips, Waldo B., "Counseling Negro Pupils: An Educational Dilemma," Journal of Negro Education, Vol. 29, 1960, pp. 504-507.

Rehberg, Richard A. and Lawrence Hotchkiss, "Educational Decision-makers: The School Guidance Counselor and Social Mobility," Sociology of Education, Vol. 45 (Fall, 1972), pp. 339-361.

Russell, R.D., "Black Perception of Guidance," Personnel and Guidance Journal, Vol. 48, No. 9 (May 1970), pp. 721-728.

St. John, Nancy H., School Desegregation Outcomes for Children (New York: John Wiley and Sons), 1975.

Schwartz, Audrey James, "Social Science Evidence and the Objectives of School Desegregation," in John E. McDermott (ed.), Indeterminacy in Education (Berkeley: McCutchan Publishing Corporation), 1976, pp. 73-113.

Sewell, William H. and J. Michael Armer, "Reply to Turner, Michael and Boyle," American Sociological Review, Vol. 31 (October 1966), pp. 707-712.

Sewell, W.H., A. O. Haller, and G. W. Orlendorf, "The Educational and Early Occupational Status Attainment Process: Replication and Revision," American Sociological Review, Vol. 35, 1970, pp. 1014-1027.

Shea, Brent Mack, "Schooling and Its Antecedents: Substantive and Methodological Issues in the Status Attainment Process," Review of Educational Research, Vol. 46, No. 4 (Fall 1976), pp. 463-526.

Shea, P., Upward Bound Early Progress, Problems and Promise in Educational Escape from Poverty, Report to the U.S. Office of Economic Opportunity, 1967.

Taeuber, Karl E., and Alma F. Taeuber, Negroes in Cities (Chicago: Aldine Publishing Company), 1965.

Turner, Ralph H., The Social Context of Ambition (San Francisco: Chandler Publishing Company), 1964.

Turner, Ralph H., "On Neighborhood Context and College Plans (I)," American Sociological Review, Vol. 31 (October 1966), pp. 698-702.

U.S. Commission on Civil Rights, Racial Isolation in the Public Schools, Vols. I and II (Washington: Government Printing Office), 1967.

U.S. Department of Health, Education and Welfare, undated, Directory of Public Elementary and Secondary Schools in Selected Districts, Fall 1972 (Washington: U.S. Government Printing Office).

U.S. Office of Economic Opportunity, undated, An Evaluation of Upward Bound: Findings and Conclusions, Office of Economic Opportunity, Washington, D.C.

Wagner, Alan and Lawrence J. Tenison, "Description and Specifications for the Linked NLS-Institutional Data Base," (Washington: College Entrance Examination Board), 1976.

Washington, Kenneth S., "What Counselors Must Know About Black Power," Personnel and Guidance Journal, Vol. 47, 1968, pp. 204-208.

Weinberg, Meyer, Minority Students: A Research Appraisal (Washington: Department of Health, Education, and Welfare, National Institute of Education), 1977.

Wilson, Alan B. "Residential Segregation of Social Classes and Aspirations of High School Boys," American Sociological Review, Vol. 24 (Winter 1959), pp. 836-845.

Wright, Sewell, "The Method of Path Coefficients," Annals of Mathematical Statistics V, 1934, pp. 161-215.

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